


**DRAFT
ENVIRONMENTAL IMPACT STATEMENT
FOR THE
DEVELOPMENT CONCEPT PLAN**

**DECKER CANYON
SANTA MONICA MOUNTAINS NATIONAL RECREATION AREA
Los Angeles and Ventura Counties, California**

**Review Draft
February 1987**

U.S. Department of the Interior / National Park Service



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The development concept plan for the Decker Canyon property in the Santa Monica Mountains National Recreation Area will guide the management and development of this property for the next 10-15 years. Development is proposed within the Mulholland Scenic Parkway corridor, an area designated in the establishing legislation for protection of the scenic resources, which provides a unique framework for developing an environmentally and aesthetically compatible activity site within the corridor through sensitive resource management and facility design. The plan also presents goals and objectives for site management of Decker Canyon to include protection, preservation, and interpretation of natural, cultural, and scenic resources for public recreation and enjoyment. The property is currently undeveloped and subject to indiscriminate recreational use. This document discusses four alternatives: no action (alternative I), partial disposal of the property (through exchange) (alternative II), day use development (alternative III), and the development of a day use and overnight, barrier-free, environmental education facility (alternative IV). Under alternatives III and IV, the site receives active management for recreational use and interpretation, providing facilities that would be accessible to and usable by all segments of the visitor population, regardless of physical or mental ability. In alternative IV, the alternative preferred by the National Park Service, the overnight camp and facilities are open to the public and targeted toward the full population of disabled rather than a specific age group or disability. The document describes the physical, biological, and cultural environment and discusses the environmental and socioeconomic consequences of the alternatives.

The preferred action would be implemented at relatively little cost to the federal government, with the major costs of design, construction, and operation of the facility obligations of a concessioner. Facilities in alternatives III and IV are designed to limit impacts, and measures are proposed to mitigate effects on archeological sites and a small wetland area. Generally, the consequences of the preferred action are positive, enhancing the preservation of natural and cultural resources and providing the opportunity for public recreation and education. No threatened or endangered species have been observed at the site.

Comments will be received until _____

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U.S. Department of the Interior/National Park Service

SUMMARY

This development concept plan for the Decker Canyon property in the Santa Monica Mountains National Recreation Area will guide the management and development of this property for the next 10-15 years. Four alternatives, which include the preferred alternative (alternative IV, the proposed action), are described and evaluated in this document.

The Decker Canyon property was acquired in 1983 after the completion of the area's Final General Management Plan (NPS 1982a) and was not addressed in the Final Environmental Impact Statement (NPS 1982b). The property was originally acquired for possible exchange for other high priority property within the national recreation area (NRA). This Draft Environmental Impact Statement for the Development Concept Plan addresses the following concerns for the Decker Canyon property:

management options for preserving the natural and cultural resources of the 151-acre property

preservation of the Mulholland Scenic Parkway corridor

possible development of a totally accessible, barrier-free, environmental education facility

relocating Decker Road to eliminate the hazardous intersection with Mulholland Highway and unify the site into a contiguous parcel

The present management strategy would remain essentially unchanged in the no-action alternative (alternative I). Minimal actions, such as installing structural barriers (to prevent the indiscriminate use of the area by off-road vehicles) and defining a small parking area might be undertaken to

enhance public use and preservation of the property. Picnic tables and trash receptacles might be added if there is sufficient need.

Alternative II examines the option of exchanging part of the property for other high priority lands within the national recreation area. In the scenario chosen for this alternative approximately 101 acres of the 151-acre property would remain in federal stewardship and be managed essentially as described under the no-action alternative. The remaining 50 acres, five 10-acre parcels, would be made available for exchange to private interests. Private development that would be compatible with protection of the Mulholland Scenic Parkway corridor is analyzed, and parcels would be subject to deed restrictions that would require any development to be screened from view from the Mulholland corridor by natural landforms. Another option considered for exchange is allowing a private, commercial use similar to the camp proposed in alternative IV.

Alternative III would provide more support for existing day use and expand that use through development of gateway facilities, interpretive programs, and trails. As a gateway area, information would be provided on the National recreation area as well as site-specific information. A parking area, accessible nature and equestrian trails, restrooms, picnic tables, and an interpretive activity center would be provided. All facilities would be handicap-accessible. Relocation of Decker Road, which splits the relatively level bowl area into two parcels, would eliminate its dangerous intersection with Mulholland Highway and permit more efficient site utilization. Indiscriminate use of the property by off-road vehicles (ORVs) would be eliminated, and the informal dirt roads would be restored. A wastewater treatment system would be needed. This alternative assumes a commitment to

retain the property in federal ownership and actively manage the resources. The National Park Service would seek alternative funding (nonfederal) sources for the development of the activity center.

The fourth alternative, the preferred (proposed) action, is to develop a gateway activity site for day and overnight use. It would focus on a barrier-free, handicap-accessible overnight camp that would be principally oriented towards the appreciation, understanding, and enjoyment of the natural and cultural resources of the site. This camp would be accessible to and usable by all persons, regardless of physical or mental ability, and the facilities would be targeted to serve family groups, couples, or groups of friends with at least one disabled or elderly member. This user group is not currently served by recreational facilities in the greater Los Angeles area. Facilities that would be available to day users and overnight campers would include an interpretive activity center, small amphitheater, interpretive and general use trails, and picnic tables.

Overnight accommodations would be developed for 75 to 80 campers (up to 100 might be accommodated under some circumstances). Rooms would be arranged in three lodges, each lodge having a community kitchen facility, outdoor gathering space, and storage capability. A separate dining facility/multipurpose building would serve the entire camp. Other facilities would include a therapeutic pool, an equestrian facility, nurse's office and first aid station, director's residence, storage/maintenance facility, and parking. Water, power, and telephone services are available at the site; a separate wastewater treatment facility would be required.

As in alternative III, Decker Road would be relocated, thereby eliminating

its hazardous intersection with Mulholland Highway and making a more topographically suitable development area available. Relocation of the road would require cooperation among the National Park Service, the state, the county, and the concessioner.

The National Park Service and a concessioner, who would be selected by the National Park Service in a competitive concession contract bid, could cooperatively manage the interpretive center and the camp. Specific details would be negotiated in the contract. The concessioner would have primary responsibility for development.

The principal consideration under all of the alternatives is the protection of the cultural resources and natural ecosystems and the enjoyment, use, and understanding of these resources by visitors, consistent with management policies. Because the activity site is in the Mulholland Scenic Parkway corridor viewshed, any development must be compatible with the objectives for preserving this scenic resource. The use of earth-sheltered design concepts for the facilities is a technique proposed for minimizing aesthetic impacts as viewed from Mulholland Highway. The earth-sheltered design and passive solar capabilities would maximize energy conservation and reduce damage by wildfires. Through sensitive facility design and careful construction activities, preservation of the Mulholland Scenic Parkway corridor viewshed would be ensured.

For alternatives I, III, and IV, the actions are focused within the bowl area along Decker Road, which has been impacted by bulldozing activities and unregulated vehicle and pedestrian use. Implementation of alternative III would directly impact approximately 2.64 acres. Alternative IV would

directly affect approximately 7.91 acres. At most, approximately 35 acres of the 151-acre property would be visibly affected; however, because of the use of earth-sheltering and the careful placement of facilities within the terrain, little of the development would be visible from Decker Road and virtually none would be visible from Mulholland Highway. Dirt roads and understory vegetation within the oak woodland, riparian zone, and wetland would be restored. Roofs of the earth-sheltered structures would provide some additional area of restored grassland habitat.

There are no known state or federally listed threatened or endangered species inhabiting, using, or nesting on the site. Suitable habitat does exist for the San Diego Mountain king snake and the Least Bell's Vireo, both listed by the California Department of Fish and Game as rare and endangered, respectively; the Least Bell's Vireo is also listed as a federally endangered species. There have been no specific extended surveys to document the presence or absence of these species.

Based on existing information, no significant long-term impacts to air quality, wildlife, floodplains, or wetlands are anticipated under any of the alternatives.

Increased visitor use under any of the alternatives could adversely affect archeological sites, resulting in damage to these resources. Sensitive planning of facilities and on-site monitoring during construction would avoid impacts from construction activities. Under the preferred alternative and alternative III, the presence of management personnel on site would minimize the potential for vandalism.

Alternatives II, III, and IV would have some minimal beneficial effects on the local economy.

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INTRODUCTION

The Santa Monica Mountains National Recreation Area was created by Congress in 1978 (Public Law 95-625) to protect and make available for recreation, enjoyment, and education a rugged, diverse sample of Mediterranean-type environment in southern California. From the legislative history, it is clear that Congress intended a different management approach in the Santa Monica Mountains than had traditionally been applied to national park system areas. The philosophy of public use and enjoyment without impairing landscape values was to be applied not just by buying and managing land but also through the participation of state and local governments and private landowners.

The following management objectives apply not only to the way the National Park Service manages its lands but also to how it conducts itself with its neighbors in the mountains:

Protect and perpetuate the natural, cultural, and scenic resources, giving special attention to endangered and threatened plants and animals, significant ecological areas, and native American Indian and historic sites.

Work actively to eliminate, minimize, or mitigate the impact of threats to natural and cultural resources and to improve regional air and water quality.

Provide a wide variety of outdoor recreation and learning opportunities that are reflective of the diversity of the resources in the mountains and along the coast.

Ensure the opportunity for a full range of experiences to serve regional and national visitors, including the young, the elderly, the transit-dependent, and people from a diversity of ethnic and social cultures.

Establish the facilities necessary for information/orientation, recreation, interpretation, education, and recreation area maintenance and operations; adapt existing structures or have such facilities provided by others whenever possible.

Provide the opportunity for people, especially urban residents and landowners in the mountains, to become aware of the unique and inherent values of the resources of the mountains and coast and the opportunities and limitations that are presented for private stewardship.

Recognize and enhance the opportunities for creating partnerships and sharing responsibilities with state and local governments and the private sector for protecting resources and providing recreational and educational services in ways appropriate to the rules, authorities, and capabilities of the partners.

Participate with local jurisdictions and landowners in the mountains to create a sense of private land stewardship in the recreation area.

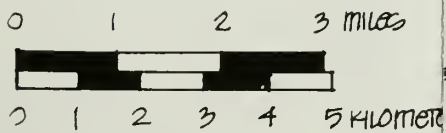
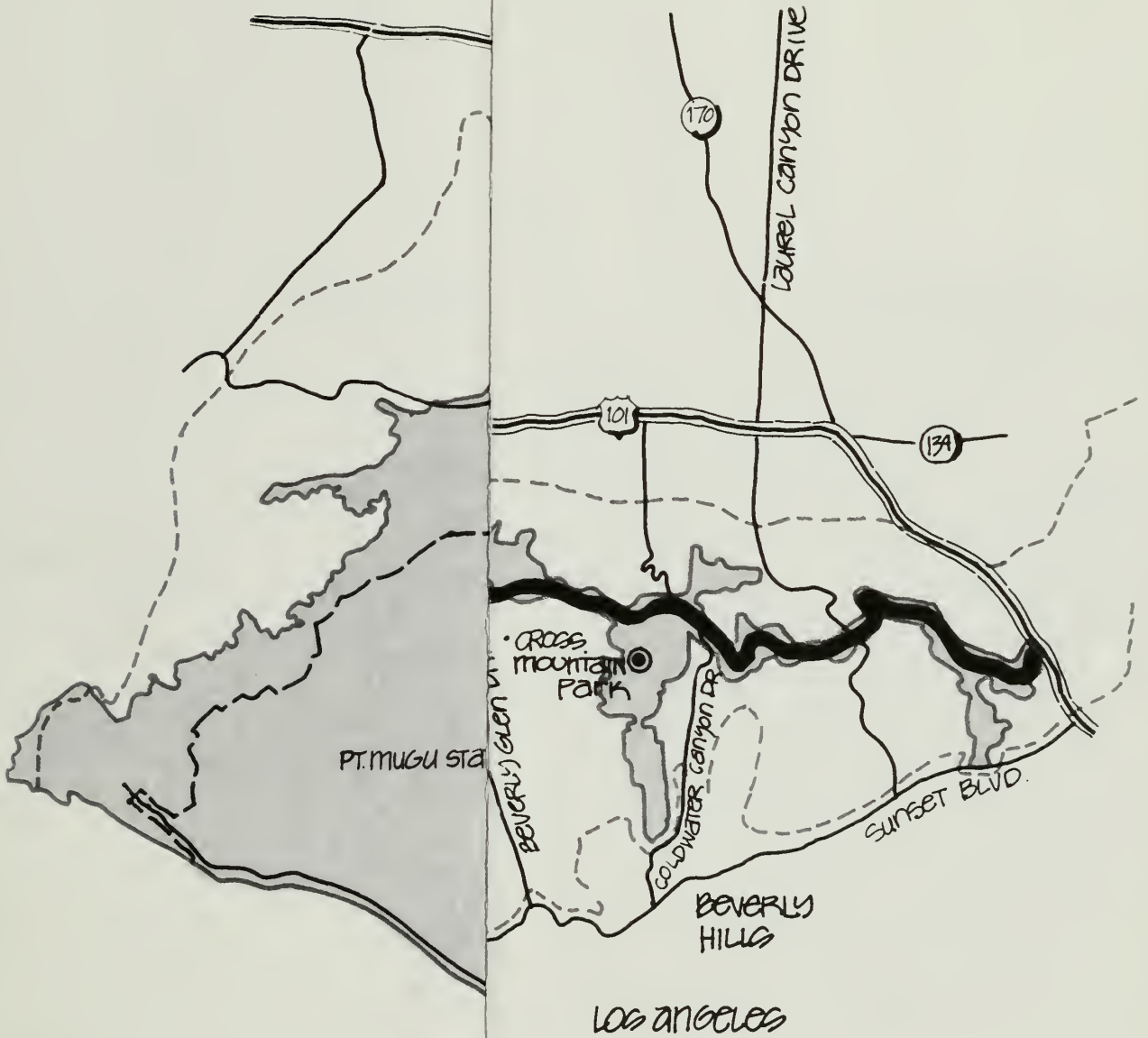
Be a neighbor to other landowners, helping to protect their interests and rights and taking into account their individual concerns.




Recognize the importance of the relationship between mountain and coastal resources in all programs and activities.

Work actively for the creation of efficient and varied ways to move people to, through, and around the recreation area.

The Final General Management Plan (NPS 1982a) states:

The Santa Monica Mountains contain precipitous terrain, areas that are virtually inaccessible or are difficult to reach even by the able-bodied, and a variety of natural hazards. Barriers resulting from these conditions can be particularly formidable for disabled people. Access and development barriers must be removed if all visitors are to enjoy the mountains and participate in recreational activities using the same facilities and programs. Participation by the disabled is currently limited and tends to be associated with special programs, often sponsored by private recreation camps or the National Park Service. A variety of new actions can be taken by the National Park Service in cooperation with other agencies and organizations to ensure opportunities for the disabled.



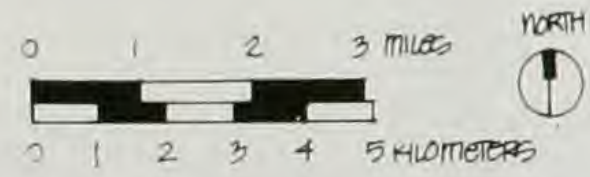
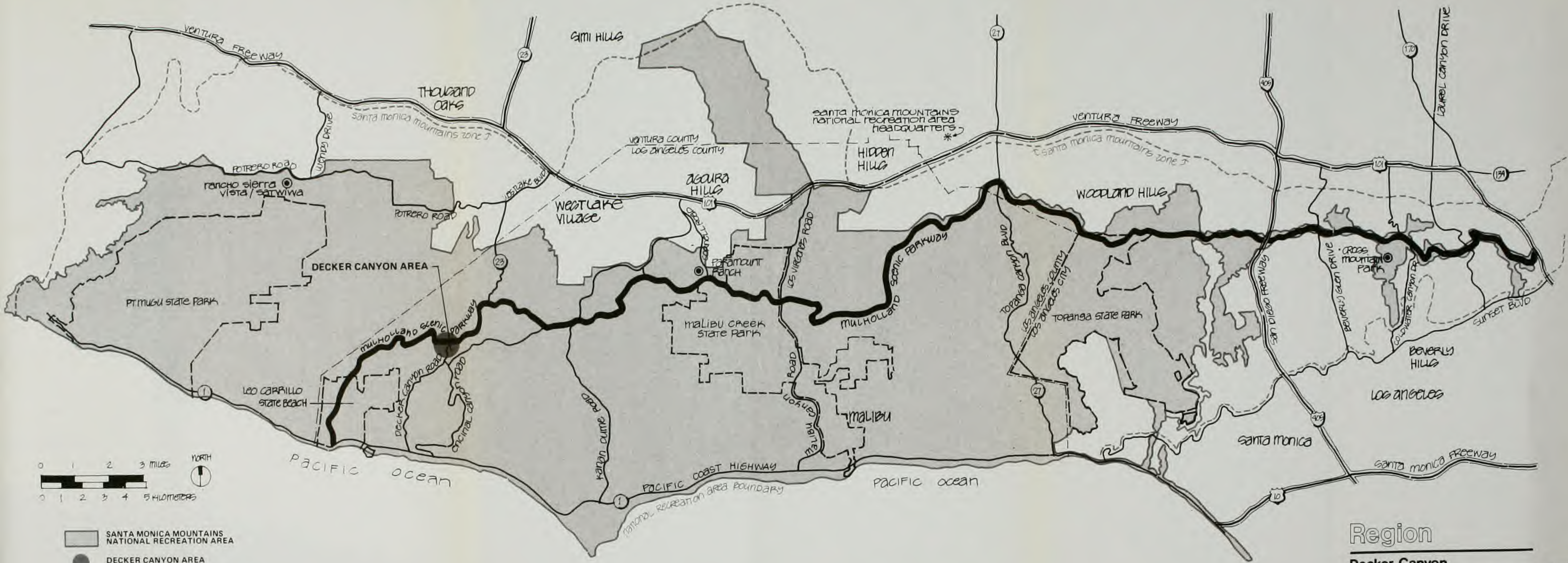
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-  DECKER CANYON AREA
-  SANTA MONICA MOUNTAINS

Region

Decker Canyon

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United States Department of the Interior / National Park Service

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- SANTA MONICA MOUNTAINS NATIONAL RECREATION AREA
- DECKER CANYON AREA
- SANTA MONICA MOUNTAINS ZONE

Region

Decker Canyon

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Vicinity

Decker Canyon

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0 1 Mile



The 151-acre Decker Canyon property is essentially undeveloped except for Decker Road, which crosses the site, and a number of random off-road vehicle roads. The site has shade oaks, water features, open hiking areas, moderate terrain, diverse vegetation, and good potential for wildlife observation, and it is at a key intersection--Mulholland Highway and Decker Road. Although narrow and winding at this time, Decker Road is a state highway and a cross-mountain artery. The remainder of the property contains steep slopes and rugged canyons. (Throughout this document "property" refers to the entire 151-acres; "site" refers to the approximately 35-acre area under consideration for development.) The remainder of the property is quite rugged.

PURPOSE AND NEED FOR ACTION

The purpose of the Decker Canyon development concept plan is to determine the most appropriate future use of the property and, if visitor use is recommended, to define the levels and types of use and development that will be accommodated. The plan is needed to meet the approved management objectives of the national recreation area and to provide direction for future management of the Decker Canyon property.

BACKGROUND

Three distinct uses have been proposed for the Decker Canyon property since it was acquired by the National Park Service (NPS) in 1983. The original National Park Service proposal was to use the property to exchange for other high priority properties within the national recreation area boundaries. Restrictions such as easements or covenants would have ensured that, if exchanged, the property could only be developed in a manner compatible with guidelines for land use and development within the Mulholland Scenic Parkway corridor. However, initial examination of the property revealed several significant natural and cultural features that should be preserved for public enjoyment, and it was decided to reevaluate the appropriateness of exchange.

The 1986 draft "Interpretive Prospectus" for the national recreation area identified the Decker Canyon site as a potential introductory or gateway site for visitors as well as a site that could provide mountain experiences for those unable or unwilling to venture beyond a structured setting. (A gateway site is a parkland area where visitors can either recreate at the site or access a variety of parklands. A broad range of information services are

available at gateway sites.) With its advantageous location and proximity to the Backbone Trail, Zuma and Trancas canyons, and parklands along Mulholland Highway, Decker Canyon appears to be an appropriate location for the development of a gateway site.

In 1982 and again in 1985 the National Park Service was approached with a proposal for development and use of the site as a totally handicap-accessible environmental education camp with overnight facilities. Although the National Park Service does not intend to develop park facilities exclusively for the use of specific populations, to the extent feasible facilities and activities are to be made accessible to all populations. A 1981 National Park Service special study, Potential Visitor Use by Urban Minority and Handicapped Populations, indicated that much needs to be done to attract and serve a wide spectrum of national recreation area visitors. Nearly 1.1 million people with physical, sensory, or mental disabilities live in the seven-county region around the national recreation area. In addition, the area contains an estimated 1.4 million independent elderly persons. Although there are many public recreation areas in the region, none are totally accessible to the elderly or the broad range of mobility-, hearing-, vision-, or mentally-impaired people comprising these "special" populations. Because there is an obvious need for a facility serving these populations, the proposal for a barrier-free camp was given further analysis.

To determine if the Decker Canyon was the most suitable location for the camp or if there were more appropriate locations for these facilities, a thorough evaluation of areas within the national recreation area boundaries was undertaken. Criteria for evaluation included location and setting, access and evacuation routes, day use and environmental education potential,

terrain, natural and cultural features, potential for wheelchair-accessible trails and equestrian trails, utilities, fire hazard and distance to a fire station, and ownership (see appendix A). Where other ownerships were involved, the length of time it would take to acquire the property was also considered. A maximum of three years was established.

Several locations with suitable terrain and natural features were identified. Most of these properties had already been proposed for other development or activities or they could not be acquired within the three-year time frame. The majority of the lands to be protected in fee by the National Park Service were either identified as natural areas (offering only backcountry facilities) or had specific uses prescribed in the GMP. Other possible acquisitions did not appear suitable for camp development. In the final analysis, the Decker Canyon site proved the most suitable for further study.

The three proposed uses of the Decker Canyon property were subsequently evaluated, and it was decided to prepare a document detailing how they would be implemented. This Draft Environmental Impact Statement for the Development Concept Plan (DEIS/DCP) for the Decker Canyon property fulfills that requirement.

SCOPE OF ANALYSIS

The environmental impact statement presents four alternatives, including the preferred alternative for Decker Canyon, and it evaluates the effects of these alternatives on the environment. The primary purpose of this document is to provide a basis for public and agency comment on the environmental impact analysis and a mechanism for decision making. It has been prepared to

satisfy the concerns of some individuals and organizations who felt that some alternatives might have a significant adverse effect on the environment.

The alternatives considered are: alternative I, no action, which proposes minor site improvements and elimination of off-road vehicle use; alternative II, exchange, which proposes exchange of some of the Decker Canyon property for other properties within the national recreation area with more significant resources or exchange of a portion of the Decker Canyon property to a private interest or organization for a camp similar to that proposed in alternative IV; alternative III, day use, which proposes the construction of an interpretive activity center and use of the site as the gateway site into the Santa Monica Mountains National Recreation Area and adjacent areas; and alternative IV, the one preferred by the National Park Service, a barrier-free environmental education overnight camp that would serve the general public but which would also be targeted toward serving the full population of disabled and their family members rather than a specific age group or disability.

Initial analyses, research, and evaluations provided the information for determining significant impact topics to be addressed in this Draft Environmental Impact Statement. The DEIS evaluates the direct and indirect environmental consequences of development and related visitor use, on

- the economy
- visitor experiences
- archeological resources
- soils
- air quality
- hydrology and water quality
- floodplains and wetlands
- vegetation
- wildlife
- special status species
- fire management

This document also incorporates the recommendations of a study to determine what kind of wastewater treatment system would meet the treatment capacities required in alternatives III and IV. Many site constraints exist. The complete report is included in the appendix.

COMPLIANCE

This DEIS has been prepared in compliance with the National Environmental Policy Act of 1969. Other laws and regulations that require compliance during the review of the DEIS, the preparation of the final EIS, and the approval and implementation of the proposed action include the NEPA implementing regulations, the National Historic Preservation Act of 1966, as amended, the Endangered Species Act of 1973, Executive Order 11988 concerning floodplain management, Executive Order 11990 concerning protection of wetlands, Executive Order 11593 concerning protection of cultural resources, the American Indian Religious Freedom Act of 1978, the California Coastal Act, the Rehabilitation Act of 1973, and the Concessions Policy Act of 1965. Specific compliance requirements are discussed in the "Alternatives" and "Environmental Consequences" sections.

RELATIONSHIP TO OTHER PLANS AND PROJECTS

Several long-range planning efforts have been undertaken to determine a framework for management of the national recreation area. The Final General Management Plan (GMP) (NPS 1982a) and Final Environmental Impact Statement (FEIS) (NPS 1982b) provide concepts for the management, development, and use of the national recreation area. Those plans identified several activity

sites to serve as areas of relatively intense visitor use, but they did not provide specific guidance for the Decker Canyon property because it was acquired after their approval. A Natural Resource Management Plan (NPS 1982f) was completed in September 1982; an addendum was approved by the regional director in May 1985, and a revised Natural Resources Management Program (NPS 1986(b)) was approved in January 1986; these plans provide resource management guidelines that are applicable to Decker Canyon.

In addition to these basic management documents, guidelines for development and use in the Mulholland Scenic Parkway corridor are contained in the Mulholland Scenic Parkway Corridor - A Scenic Assessment (NPS 1984). Because the Decker Canyon site is within the Mulholland Scenic Corridor, these guidelines serve as constraints on all alternatives for the development and use of the property.

ALTERNATIVES INCLUDING THE PROPOSED ACTION

INTRODUCTION

There are several environmental and management constraints that restrict and direct development of the Decker Canyon property. The National Park Service has proposed in the Final General Management Plan (NPS 1982a) (GMP) and the Land Protection Plan (NPS 1984a) to preserve the Mulholland scenic corridor in part through the regulatory powers of state and local government and in part through purchase of fee and easement interests. Large blocks of land have been protected through acquisition of interest in lands. It is imperative that any National Park Service development within the Mulholland viewshed be sensitive to scenic resources and provide innovative examples of how such development can be accomplished. Therefore, any alternatives under consideration must resolve critical scenic design problems to serve as a model project.

In addition to the guidelines stated in the GMP for development and construction of facilities at activity sites, the National Park Service has developed the following guidelines for any facilities proposed for the Decker Canyon property:

Interpretation and environmental education should be the focus of the visitor experience, and uses and facility design should maximize awareness and understanding of the natural environment.

Facility design should be sensitive to resources, landscape integrity, fire danger, and the characteristics of Decker Canyon--especially the riparian, oak woodland, and chaparral areas, and archeological sites.

Development should not impact views from Mulholland Highway and should be consistent with the Mulholland Scenic Parkway Corridor study (NPS 1984d) and the policies of the California Coastal Act and Malibu Land Use Plan.

The natural landscape should dominate the user's perception; structures and facilities should be subordinate to the visual integrity and the continuity of drainages and grassland areas. Only native grasses and vegetation should be used in keeping with the goals of ecologically and visually sensitive design; and very minimal or no irrigation should be permitted.

Development should be fire-safe recognizing that fire is a natural event that is necessary in the chaparral environment. Fuel levels should be monitored, and current scientific information should be incorporated into native vegetation fire control methods.

The Decker Canyon property is within the Mulholland Scenic Parkway viewshed. The corridor is cited for protection in the park's authorizing legislation, and the western portion of the corridor was the subject of an National Park Service visual resources study that proposed land use categories to minimize the effects of development and use in the corridor. The study, Mulholland Scenic Parkway Corridor - A Scenic Assessment (NPS 1984d), addressed visual resources, foregrounds, backgrounds, and line of sight along the western Mulholland Highway, including the Decker Canyon property, and placed land use within the study area into four classifications:

Preservation: Only natural and biological changes should be allowed to occur.

Retention: New development should be sited or screened so that it is not visible from Mulholland.

Partial Retention: New development should be visually subordinate to the surrounding landscape and should repeat the form, line, color, and texture of that landscape. The overall character of the landscape should dominate.

Modification: New development might dominate the landscape visually but should borrow from the naturally occurring form, line, color, and texture to appear harmonious when viewed from Mulholland.

Interpolating four land use classes from the study maps provided basic scenic development restrictions for consideration (see Alternative II map later in this section). The most restrictive class, preservation, rules out development in the oak woodland and riparian zone. The retention class also precludes development on the high knoll immediately adjacent to the oak woodland and Mulholland Highway. The major portion of the property falls within the partial retention class, including most of the central bowl area and the area in the intersection angle south of Mulholland Highway and west of Decker Road. This land use class provides for development that is visually subordinate to the landscape. The least restrictive modification class includes all the steep south- and east-facing slopes on the property. The only level portion of land in this class is screened from view from Mulholland by the oak woodland; however, it lies in an area of prime concern for cultural resources and water quality. Except for two small areas, the modification area of the property contains the most severe topographical constraints.

National Park Service staff will continue to review private development projects in the Mulholland corridor. Comments to regulatory agencies might seek to modify or limit private development that has adverse impacts on the scenic, natural, and cultural resources of the corridor. Any National Park Service development actions on the Decker Canyon property must be exemplary. All of the alternatives presented below have been designed to conform to the land use concepts of the Mulholland corridor study and all other National Park Service guidelines and policies.

Much of the 151-acre property consists of steep and rocky canyons and ridges. The property is essentially undeveloped except for Decker Road, which crosses

the site, and a number of random off-road vehicle roads. Much of the area suitable for development, but it contains fragile riparian habitat and archeological resources that must be protected. Care would be required to minimize or mitigate any impacts to these resources in accordance with section 106 of the National Historic Preservation Act (16 USC 470 et seq.); Executive Order 11593, "Protection and Enhancement of the Cultural Environment" (36 FR 8921); and the American Indian Religious Freedom Act of 1978 (92 Stat. 469, 42 USC 1966). In addition, under the Coastal Zone Management Act of 1972 (16 USC 1451), the proposal should, to the extent feasible, be consistent with the policies of the California Coastal Act. The Endangered Species Act of 1973 (16 USC 1531 et seq.) and Executive Order 11990 of May 24, 1977, "Protection of Wetlands" (42 FR 26961) are among other laws and executive orders applicable to this planning process. (Refer to appendix B for a more complete listing.)

No federal or local permits other than routine permits associated with construction are required for implementation of any of the alternatives. Consultation and coordination with local agencies are part of the normal procedures followed by the national recreation area staff. A routine permit would be required to connect to the Las Virgenes Municipal Water District, and an encroachment permit from the Los Angeles County Department of Public Works would be required if it is necessary to cut roads to install the utilities. Under alternative II, where portions of the land would become private property, permits for development would be required from Los Angeles County and the California Coastal Commission.

Facility design must take into account several site and environmental characteristics. Hot, dry, Santa Ana winds, in combination with high fuel

loads and the volatile nature of the chaparral vegetation, can pose significant potential for wildfire. Climate may also affect use of the site. Persons on sunny, exposed trails are susceptible to the effects of high summer temperatures. This is of particular concern when designing facilities to serve mobility-impaired persons who have difficulty in regulating body temperature.

Archeological investigations have been conducted to determine the extent and significance of the prehistoric resources on the site. Development in each alternative has been designed to avoid impact on known concentrations of artifacts (based on preliminary surveys). Prior to completing the final environmental impact statement, consultations will be held with the state historic preservation officer and continued with appropriate native American Indian interests. The development plans might be modified, if necessary, to eliminate or mitigate impacts.

Management of the cultural resources of Decker Canyon property will be further addressed in the cultural resource management plan, which is currently being prepared. Management activities will involve collecting surface artifacts to protect them from vandalism and, as funds become available, studies would be made to determine the significance of the area for potential inclusion on the National Register. The cultural significance of the archeological sites would be evaluated in terms of National Register of Historic Places criteria, but until then the National Park Service will assume eligibility based upon the assessment of Dr. King and Dr. Raab (see bibliography).

Under all alternatives the facilities and programs would be intended to serve

a wide variety of educational and recreational needs. Under the various alternatives the degree of accessibility would be proportional to the degree of development. Under alternatives I and II, the modest facilities would be accessible to the extent feasible without extensive grading of the site. Under alternatives III and IV all trails and facilities would be handicap-accessible. New facilities would comply with the requirements of the Architectural Barriers Act of 1968 (82 Stat. 718, 42 USC 4151 et seq.) and the Rehabilitation Act of 1973 (87 Stat. 357, 29 USC 701 et seq.) as amended by the Rehabilitation Act Amendments of 1974 (88 Stat. 1617).

Under alternatives III and IV, Decker Road would be relocated, eliminating the hazardous intersection at Mulholland Highway, and the present alignment of Decker Road would be used for parking areas, trails, and the interpretive activity center. Many of the existing off-road vehicle roads would be converted to trails; those not used for trails would be permitted to return to natural conditions. The total area of development is 2.64 acres under alternative III and 7.91 acres under alternative IV. These are 0.018 percent and 0.05 percent, respectively, of the Decker Canyon property. A small portion of this total development (between 0.11 and 0.19 acres) would be earth-sheltered, providing additional restored vegetation and wildlife habitat following construction. A portion of the off-road vehicle roads would be returned to productivity.

Visually, the most extensive development would occupy an area of approximately 35 acres in the bowl area along Decker Road; at most less than 8 acres of that would be intensively developed. Because of the use of earth-sheltering and the careful placement of facilities within the terrain in alternatives III and IV, little of the development would be visible from Decker Road and virtually none would be visible from from Mulholland Highway.

ALTERNATIVE I: NO ACTION (EXISTING CONDITIONS)

DESCRIPTION

The Decker Canyon property would be retained in federal ownership and no specific program or facility development would be proposed for the site in the foreseeable future.

COOPERATIVE PLANNING AND MANAGEMENT

National recreation area staff would continue to monitor development in the vicinity of the property through review of county and California Coastal Commission permit processes. Monitoring would identify potential adverse impacts to the property, and the National Park Service would seek cooperative planning measures with permitting agencies and developers to mitigate or prevent impacts.

RESOURCE MANAGEMENT

The Decker Canyon property was the location of a prescribed burn in 1983; resource staff would continue to monitor vegetation and fuel loads. Some water quality monitoring would continue. No specific research or management programs would be planned for this property, but parkwide programs could occasionally use the site.

Management of the cultural resources of the Decker Canyon property will be further addressed in the cultural resource management plan, which is

currently being prepared. Management activities will involve collecting surface artifacts to protect them from vandalism, and as funds become available, studies would be made to determine the significance of the area for potential inclusion on the National Register. Site protection would involve regular patrol.

VISITOR USE AND DEVELOPMENT

Casual use of the site for picnicking, hiking, and horseback riding would continue. The site is not used regularly for visitor programs, but guided hikes and programs could be given. The use of restrictive signing and aesthetically compatible barriers to define a small parking area (5 to 10 cars) and prohibiting use of the dirt roads would reduce or eliminate existing impacts from vehicular use of the property. Surfacing materials, such as soil cement or a soil binder, would be used, if needed, for the parking area. Trash barrels and a few picnic tables might eventually be required to limit visitor impacts to a smaller area and reduce the scattering of trash.

The modest facilities would be handicap-accessible to the extent feasible without extensive grading of the site.

MANAGEMENT AND OPERATIONS

Ranger patrols would continue at the present level. Patrols are occasional, providing minimal protection of resources. Maintenance activity would be infrequent and concentrate on trash collection. Current levels of visitor



Oak Woodland Picnic Use



Major Drainage



Secondary Drainage



Visually Diverse Unique Environment



Views



Rock Outcrops



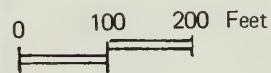
Rolling Grassland



Existing Dirt Road



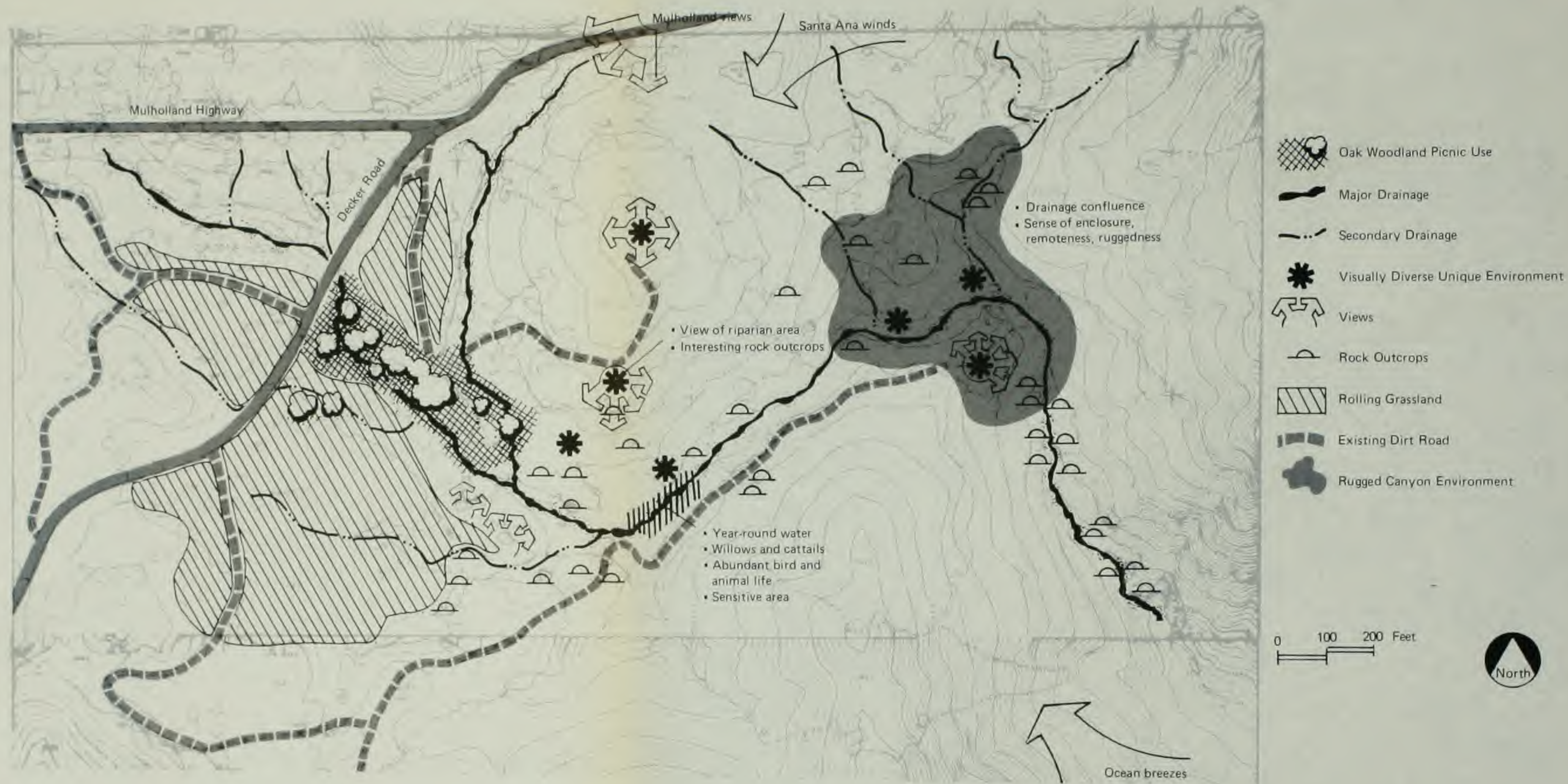
Rugged Canyon Environment



ting Conditions

Canyon

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Existing Conditions

Decker Canyon

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use and the small size of the national recreation area maintenance and ranger staffs preclude any increase in operational activity. Some increase in operational costs might be required to remove trash, institute more frequent trash collection, secure the site from unauthorized uses, and perhaps for additional picnic tables and trash receptacles if installed. If the no-action alternative is selected, national recreation area staff would develop program requests for any needed operational increase.

DEVELOPMENT COSTS

No development is proposed.

ALTERNATIVE II: EXCHANGE

DESCRIPTION

The Decker Canyon property was originally acquired for use as trading stock, that is, to exchange for more sensitive properties threatened by insensitive development or other adverse uses. It was assumed that when the property was exchanged, there would be restrictions on development at Decker Canyon to protect visual, cultural, and natural resources. The deed restrictions were not defined at the time of acquisition, but the Mulholland Parkway Scenic Corridor study (NPS 1984d) and current resource investigations provide the basic parameters for the deed restrictions and identify development constraints for the property.

There are many ways that the property could be subdivided for exchange purposes. Local zoning ranges from rural commercial to residential (one dwelling unit per acre) to mountain land (one dwelling unit per 20 acres). To protect the visual integrity of the Mulholland scenic corridor, a much lower density is proposed in this alternative than would be allowed by zoning. Some federal interest would be necessary to protect the preservation and retention land class areas and cultural resources.

For this alternative scenario, five possible development parcels were identified, three small bench areas in the steep modification land class area and two parcels in the partial retention land class area. The National Park Service has specified only the location and number of structures in past easements, not the architectural standards. Although restrictions on



Land Use Quality Classes



Preservation



Retention



Partial Retention



Modification



Existing Road



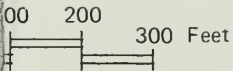
Property Access Roads (Proposed)



Building Site



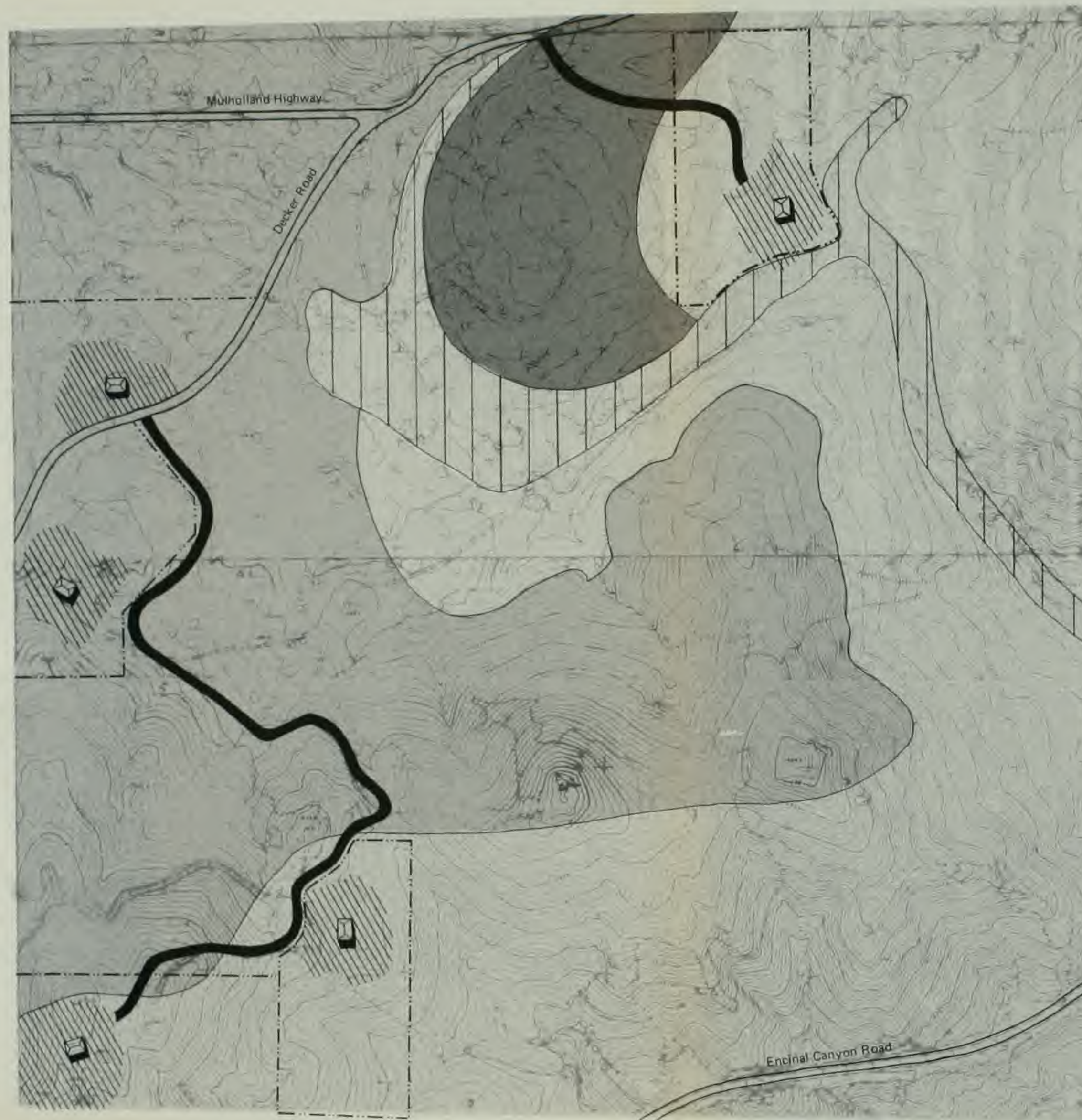
Property Line (Proposed)

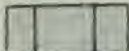
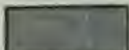


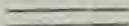

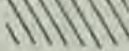



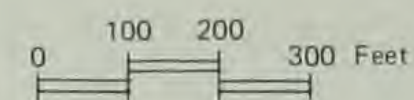
Alternative II Exchange

Cracker Canyon

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- Land Use Quality Classes:
-  Preservation
 -  Retention
 -  Partial Retention
 -  Modification
 -  Existing Road
 -  Property Access Roads (Proposed)
 -  Building Site
 -  Property Line (Proposed)



Alternative II Exchange

Decker Canyon

SANTA MONICA MOUNTAINS NATIONAL RECREATION AREA
United States Department of the Interior / National Park Service

dwelling height and architectural standards might further protect the Mulholland viewshed, these restrictions would lower the value of the property. All would meet a deed restriction calling for any development to be screened from view from Mulholland Highway by natural landforms; all would allow a 2,000-square-foot structure surrounded by 100 feet of cleared land to meet fire department codes (although vegetation management as an alternative to clearing would be encouraged). For purposes of analysis, each home would be on a parcel of approximately 10 acres. Two of the parcels would require a long access drive from Decker Road because steep slopes preclude access from Encinal Canyon Road. A third parcel would require a long access drive from Mulholland Highway.

The purpose of an individual exchange would be to allow the National Park Service to protect a higher priority area elsewhere in the Santa Monica Mountains. In return, an individual wishing to develop a single-family home or a small estate subdivision could use part of the Decker Canyon property. The Alternative II map indicates one possible way to subdivide the property. Under this example, the maximum acreage to be transferred to private ownership would be the approximately 50 acres involved in the five parcels. Increasing the acreage per parcel would not increase the National Park Service's ability to protect important resources, and an increase in acreage would increase the tax burden of the private owner.

These five development parcels appear to be well within local zoning requirements. However, approval for subdivision and private development is the responsibility of Los Angeles County and the California Coastal Commission.

The value of the land for exchange purposes has not been determined.

Another potential for exchange would be for a private organization or corporation to develop a commercial recreational facility similar to that proposed in alternative IV (see description of alternative IV for a description of acceptable facilities and impacts of development). If the land necessary for such a camp returned to private ownership and was developed, it would be considered compatible private recreation land.

COOPERATIVE PLANNING AND MANAGEMENT

The deed restrictions would formalize a cooperative relationship between the developers of parcels of the Decker Canyon property and the National Park Service. Restrictions could require the superintendent's approval of development plans and later changes to the properties. Common National Park Service scenic easement restrictions regarding building height, number and location of buildings, utility placement, access roads, etc., could be included in the deed restrictions, although, in most instances, only the location and number of structures are specified. The value of the Decker Canyon parcels in an exchange could be directly affected by the number and type of restrictions.

Management would need to monitor the parcels to ensure compliance with restrictions. Management would also need to resolve visitor and resource conflicts arising from adverse private land uses adjacent to public land.

Easements for access would be necessary for the purposes of monitoring, enforcement, and conflict resolution.

RESOURCE MANAGEMENT

Resource management activity would be required for monitoring impacts of adjacent private uses. Continuance of a program of prescribed burns would require close cooperation with private owners. Regular water quality sampling would be required to identify any increase in point-source pollution.

Management of cultural resources would be the same as in alternative I.

VISITOR USE AND DEVELOPMENT

Same as for the no-action alternative.

MANAGEMENT AND OPERATIONS

The park staff would develop a working relationship with private landowners as the first line of contact in cooperative activities, restriction monitoring, and conflict resolution. Rangers would become familiar with deed restrictions and access easements to monitor impacts. The park staff would review and negotiate requested changes in the properties and pursue any enforcement activities with higher authorities. To monitor private uses, cooperate with landowners, and protect the remaining federal lands from illegal uses, an increase of one-half work-year for ranger services would be required. Other increases in National Park Service operation would be required to accommodate new maintenance needs. The juxtaposition of public and private land could increase the need for signing, fencing, and landscaping parcel boundaries. Up to one additional man-year for maintenance

would be required if homeowners do not assume these responsibilities. Operations increases of approximately \$50,000 per year for maintenance and patrol might be required. Other management and operations costs would be as in alternative I.

DEVELOPMENT COSTS

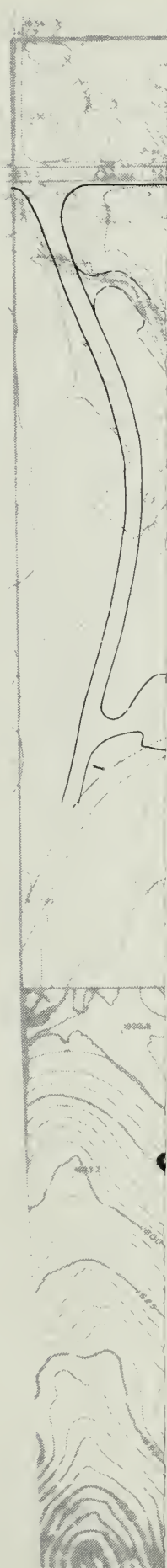
No National Park Service development is proposed. However, the potential need for signing, fencing, and landscaping to delineate public and private land could result in development expenses of an undetermined amount. Other development costs would be as in alternative I.

ALTERNATIVE III: DAY USE

DESCRIPTION

This alternative assumes a commitment to retain the Decker Canyon property in federal ownership. Taking advantage of the site's natural and cultural resources and its location, Decker Canyon would be developed as a day use gateway for the national recreation area and other parklands in the area. Users would be encouraged to explore these resources, and the facilities would provide a starting point for exploration of the Santa Monica Mountains. Information would be available on recreation opportunities in the western half of the mountains, with an emphasis on parklands accessible from Mulholland Highway and in the Zuma and Trancas canyons. Available activities would include picnicking, nature walks, environmental education, and short hikes. Development would accommodate existing public use but would also greatly expand recreational opportunities and visitor programs through development of facilities, especially the new interpretive activity center and amphitheater. All facilities would be handicap-accessible. Off-road vehicular access to the site would be eliminated.

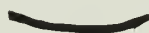
Development in this alternative would be phased, with the initial development similar to alternative I. The second phase would require relocating Decker Road, eliminating the hazardous intersection with Mulholland Highway and permitting more efficient site utilization, and could include a parking area, wayside exhibits, and an information kiosk. The final phase, with the development of the interpretive center, would occur when visitation warranted a stronger interpretive presence in the area. The total area of development



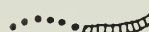
PEDESTRIAN/EQUESTRIAN TRAIL



EQUESTRIAN TRAIL TO BACKBONE TRAIL



PEDESTRIAN TRAIL



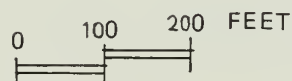
INTERPRETIVE LOOP TRAIL/BOARDWALK



POSSIBLE LOCATION FOR INTERPRETIVE SIGN



SHADE PLANTING

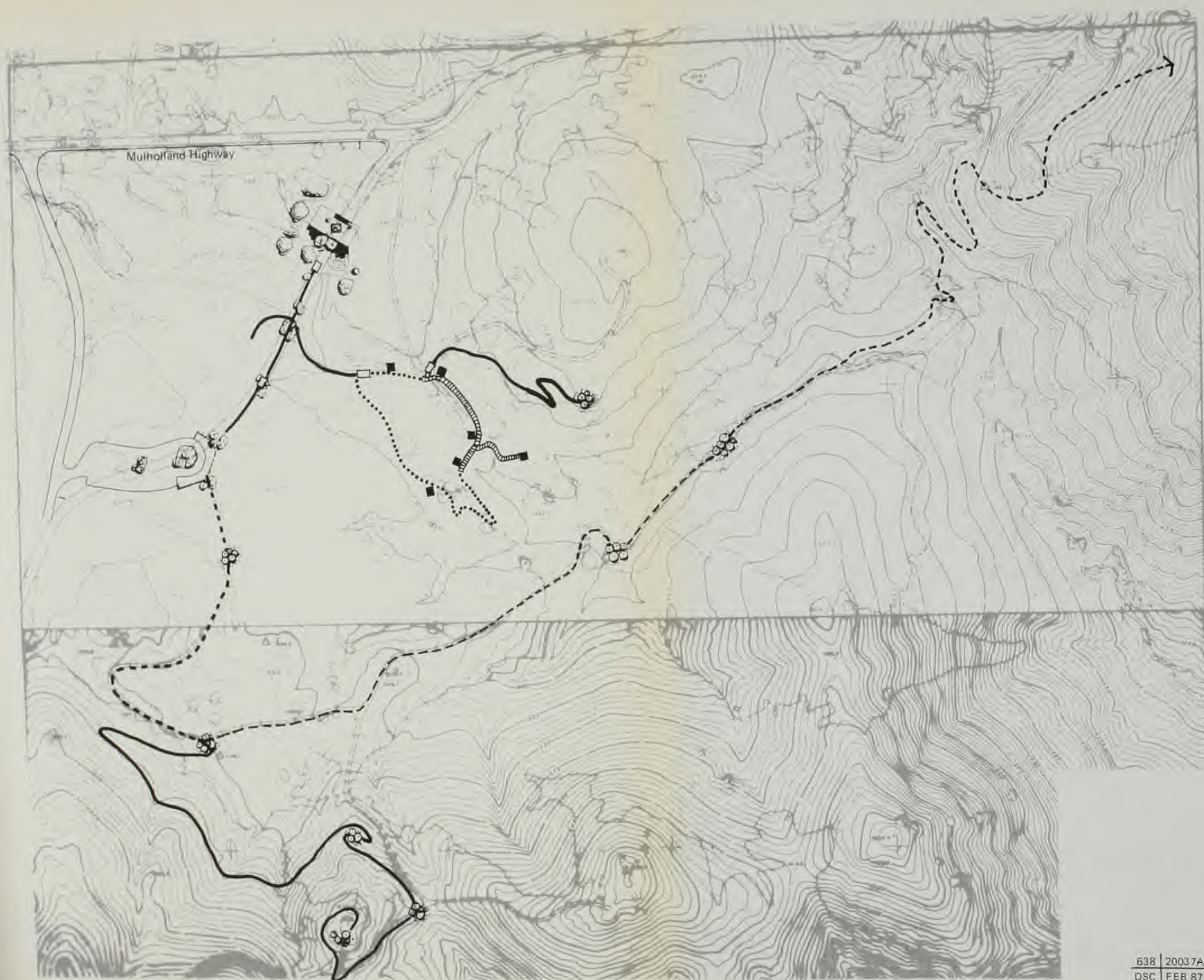








Alternative III Day Use Area Relationship

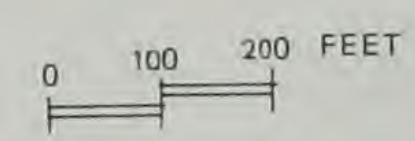
Decker Canyon

SANTA MONICA MOUNTAINS NATIONAL RECREATION AREA

United States Department of the Interior / National Park Service



-  PEDESTRIAN/EQUESTRIAN TRAIL
-  EQUESTRIAN TRAIL TO BACKBONE TRAIL
-  PEDESTRIAN TRAIL
-  INTERPRETIVE LOOP TRAIL/BOARDWALK
-  POSSIBLE LOCATION FOR INTERPRETIVE SIGN
-  SHADE PLANTING



Alternative III Day Use Area Relationship


Decker Canyon

SANTA MONICA MOUNTAINS NATIONAL RECREATION AREA
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ALTERNATIVE 3 – DAY USE

- A: DECKER CANYON ENVIRONMENTAL EDUCATION CENTER ENTRY SIGN
Sign establishes public entrance and National Park Service presence and invites day users.
- B: INTERPRETIVE ACTIVITY CENTER WITH OBSERVATION DECK ON ROOF
Serves as a staging point that welcomes day users and introduces them to the site. West side of building has area for a fireplace and permanent interpretive exhibits. East side is a flexible space for indoor programs, crafts, environmental education, offices, storage, restrooms, and library, and opens to a patio with south-facing sliding glass doors.
- C: SKYLIGHT OVER BUILDING ENTRANCE
Skylight floods interior with natural light to reinforce indoor-outdoor relationship of building.
- D: BUILDING WALL BELOW EARTH-COVERED ROOF
- E: INTERPRETIVE ACTIVITY CENTER SIGN AND KIOSK
Establishes pedestrian entry and welcomes day users. Kiosk provides site and park orientation and information.
- F: PATIO SPACE
Informal outdoor patio provides maximum flexibility for indoor-outdoor programs and a fuel break at south-facing building opening. Sycamore plantings provide passive solar screening.
- G: AMPHITHEATER WITH FIRE RING
Takes advantage of slope and is adjacent to interpretive activity center to attract day users. Patio serves as stage area. Fire ring is within patio for safety. Multipurpose patio concentrates development and minimizes area requiring pavement.
- H: PICNIC TABLES ALONG TRAIL
Tables near trail concentrate use and are easily accessible.
- I: TYPICAL WAYSIDE EXHIBIT AND BOARDWALK SECTION OF INTERPRETIVE LOOP TRAIL
Boardwalk reinforces visitor's sensitivity of the oak and riparian area and helps protect these resources by confining use to the trail.
- J: TRAILHEAD WAYSIDE EXHIBIT
Provides equestrian trail information and orientation.
- K: HORSE STOP
Fence opening allows pedestrians and people in wheelchairs through but restricts equestrians.
- L: HORSE FENCE
Fence defines equestrian use area and directs equestrians to trail. Also provides temporary tie-up for horses.
- M: ENTRANCE TO BACKBONE TRAIL CONNECTION
- N: PEDESTRIAN AND EQUESTRIAN TRAIL
Trail uses existing road. Equestrian and pedestrian uses are separate, on opposite sides of the trail.
- O: PROPOSED DECKER ROAD RELOCATION
- P: PROPOSED SCREEN OR SHADE PLANTING (TYPICAL)
Native vegetation used consistently for screening and shade. Native vegetation proposed near buildings is managed to reduce fuel loads and old growth.
- Q: BACKBONE TRAIL STAGING AREA ENTRANCE SIGN



 EQUESTRIAN TRAIL

 PEDESTRIAN TRAIL

 MINOR DRAINAGE

 INTERMITTENT DRAINAGE

 PROPOSED VEGETATION

 EXISTING VEGETATION

F.F.E. PROPOSED FINISHED FLOOR ELEVATION

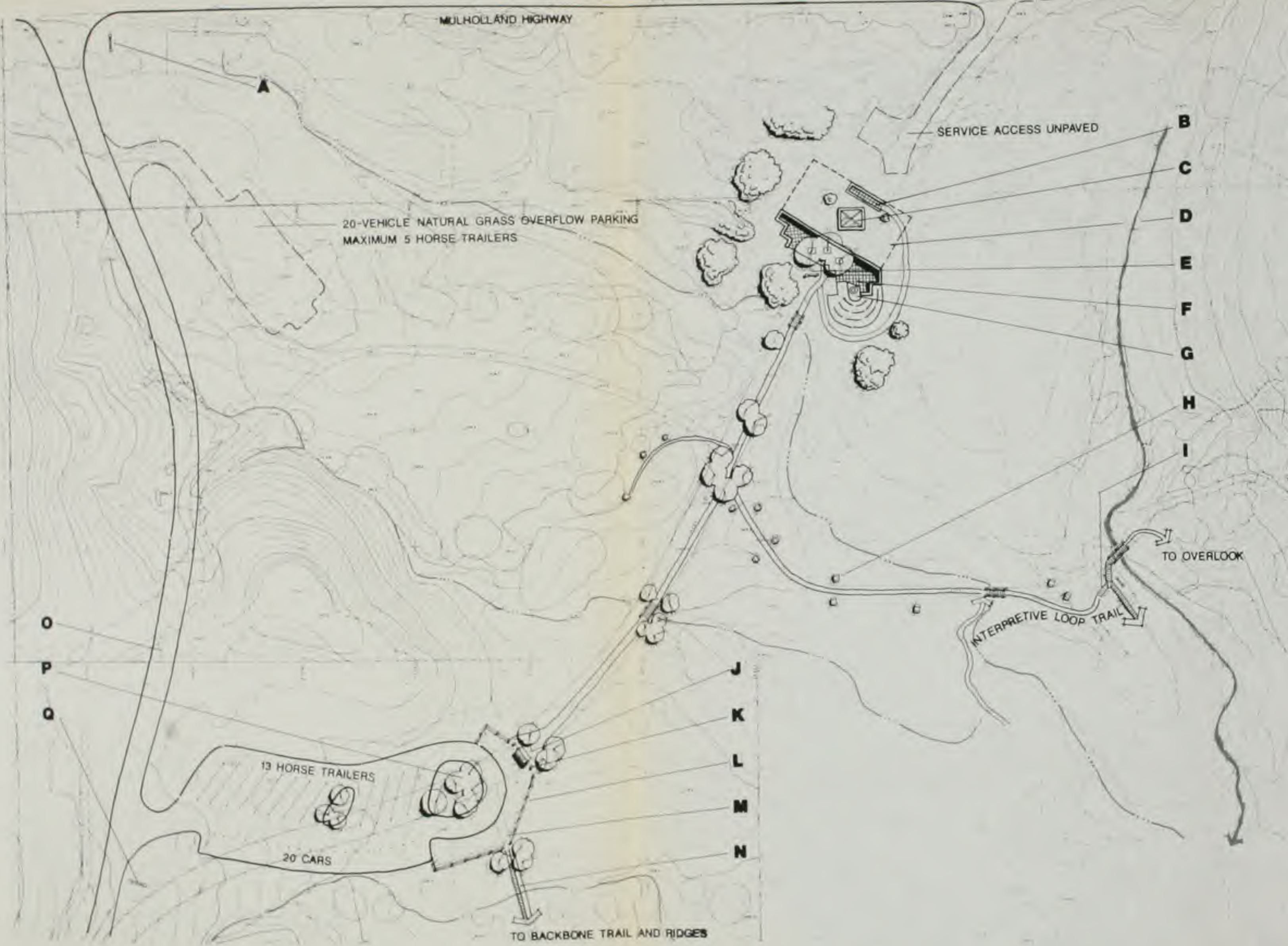


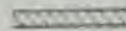
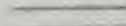



Alternative III Day Use

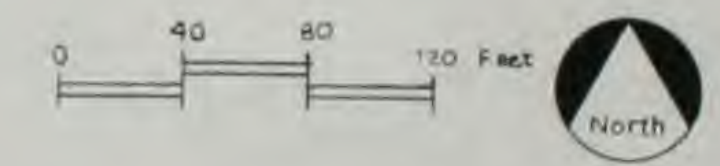
Decker Canyon

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-  EQUESTRIAN TRAIL
-  PEDESTRIAN TRAIL
-  MINOR DRAINAGE
-  INTERMITTENT DRAINAGE
-  PROPOSED VEGETATION
-  EXISTING VEGETATION
- F.F.E. PROPOSED FINISHED FLOOR ELEVATION



Alternative III Day Use

Decker Canyon

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would be 2.64 acres or 0.018 percent of the property. Of this 0.11 acres would be earth-sheltered, which would provide additional restored revegetation and wildlife habitat after construction.

The proposal by a private, nonprofit organization for use of the Decker Canyon site for the development of a barrier-free camping facility/environmental education center open to the general public and targeted toward families with disabled members provides an opportunity to meet these obligations at minimal cost to the government.

COOPERATIVE PLANNING AND MANAGEMENT

Cooperating docent organizations could develop and offer visitor programs specifically for the Decker Canyon site. The Park Service could assist in advertising these programs and training the docents. Cooperation of trail clubs (hiking and equestrian) would be sought in trail planning and development.

The cooperation of the state and the county would be needed to relocate Decker Road.

RESOURCE MANAGEMENT

Specific monitoring programs affecting the property would be related to fire management and water quality, as described in the alternative I. Because the site contains a tributary drainage into Trancas Creek, any impacts to water quality would be carefully monitored and mitigated. To help mitigate impacts, the park staff would be involved in site restoration.

Management of cultural resources would be the same as in alternative I.

VISITOR USE AND DEVELOPMENT

The Decker Canyon site has shade oaks, water features, open hiking areas, moderate terrain, diverse vegetation, and good potential for wildlife observation, which make it a prime area for visitor use. The resources could be developed into interpretive themes for trails, exhibits, and program activities. The location also provides a convenient staging area for the nearby Backbone Trail.

FACILITY DESCRIPTION

The park staff would be involved in designing the facilities, which would help to help mitigate impacts. The interpretive activity center would incorporate earth-sheltered design, which would minimize the visibility of the development, maintain site integrity, reduce the potential for damage by fire, be more energy-efficient, reduce operating costs, and preserve a majority of the grassland habitat. Earth-sheltering is a design solution that mitigates the impact of development in the area and protects the Mulholland corridor viewshed. At a flat location, earth-sheltered construction would require excavation of 2 to 5 feet to achieve finished floor and ground level grades. Excavated soil would be used to cover the completed structures on three sides and on top, and/or to create berms to shield the structures from view. Where construction would incorporate existing hillsides, the structures would be excavated into the hillside and require less general area excavation to achieve finished grades. The major

structure proposed in this alternative is an interpretive activity center; other facilities could include signs, wayside exhibits, and an information kiosk.

All structures and facilities would be constructed according to appropriate seismic codes to help ensure visitor safety and resource and facility protection. The seismic hazards in the vicinity of Decker Canyon require that structures be able to withstand a seismic loading of 4 feet/second².

Interpretive Activity Center

This structure would be the focal point for quality environmental education experiences for a wide range of visitors, including disabled and able-bodied persons, in a mainstreamed environment.

The center would incorporate earth-sheltered and passive solar design concepts, which would provide maximum energy conservation for heating and cooling. By earth-sheltering and vegetation management, personal injury and damage from recurrent fire cycles could be minimized. The Alternative III - Day Use map indicates a possible location for this center; the exact location in the same general area would be determined during the facility design phase.

The interpretive center would serve day users with a combination of permanent exhibits, rotating exhibits, amphitheater programs, crafts, outdoor recreation, and nature study activities. Interpretive themes for the site and building exhibits could include the following:

- an introduction to the natural and cultural features of the mountains
- site history and native American Indian culture
- protection of archeological resources
- diversity of ecosystems
- chaparral environment and fire ecology
- earth-sheltered architecture and passive solar energy concepts
- visitor use of the site and of the Santa Monica Mountains as a gateway for the western portion of the mountains
- how to safely enjoy the mountains
- handicap-accessibility, as demonstrated by the facilities
- critical habitat requirements for people and wildlife

The interpretive center could include an exhibit area; a multipurpose, flexible space for arts, crafts, indoor programs, classrooms and meeting rooms, storage/office space, and an audiovisual alcove; restrooms that would be accessible from inside and outside the building; a fireplace; an outdoor patio; an informal amphitheater; and an overlook from the roof. Interpretive publications and information would be for sale in the interpretive center. An unpaved road would provide service access to the center from Mulholland Highway.

Picnic Facilities

Ten to 15 picnic tables would be placed along the side trails to the north and south of the main walk between the parking area and the interpretive activity center.

Utilities

Water, telephone, and electric utilities along Decker Road and Mulholland Highway are sufficient for this development. Wastewater would be treated on site through a septic tank and absorption trench system. A lift

station would be required to pump treated water to the disposal area. Approximately one-tenth acre would be needed for this system. Any new utility lines in the developed area would be buried.

Parking

A parking area with spaces for 20 cars and 13 horse trailers would be accessible from the relocated Decker Road and would be screened by appropriate plantings of native sycamore, scrub oak, and chaparral species. This parking area would also serve as a staging area for the Backbone Trail and would have a wayside exhibit or kiosk with trail maps and other information. There would be designated parking spaces for the handicapped. An area for overflow parking for 20 cars/5 horse trailers would be provided if needed. This overflow area would be reinforced with hollow pavers that permit the natural grasses to continue growing.

Trails

All trails in this alternative, including walkways between parking areas and buildings, would be handicap-accessible. This includes a self-guided, interpretive loop trail, which would be the primary day use trail. This loop would start at the activity center and pass through the oak woodland and part of the grassland bowl area and then cross the riparian area. About 442 feet of this trail would be a 6-foot-wide boardwalk, which would be required within the oak woodland and riparian zone to eliminate soil compaction, traverse wet areas, and provide accessibility. Generally, trails would not be placed within 100 feet of the riparian areas except where grades or other

features require that they be closer. Where trails must be closer than 100 feet, they would not penetrate into the riparian area except where required to connect to bridges over streams. Other trails would explore the upper canyon area and access ridgeline overlooks. A total of 1.55 miles of trails would be available in this alternative. The park staff would coordinate trail design, construction, rehabilitation, and maintenance using volunteers and youth organizations. Surfacing materials, such as soil cement, soil binder, and boardwalks in the riparian zone, would be used. Asphalt would be used in heavy-use areas (such as walkways between buildings and parking areas) where other materials might not be suitable. Trail design would aim for grades of less than five percent. An equestrian trail connecting to the Backbone Trail (off property) would be separate from other trails.

MANAGEMENT AND OPERATIONS

The national recreation area's Ranger Services Division would coordinate development of programs through contact with docent groups, arranging docent training, and developing ranger-led programs. As a gateway to other portions of the national recreation area and as an important visitor use area, active participation by National Park Service staff would be required. Frequent patrols would be required to protect facilities, resources, and visitors. Maintenance would provide trash collection and facility maintenance. Additional personnel needs would include daily coverage for maintenance and ranger services, including two work-years for maintenance, one and one-half work-years for protection, and one work-year for interpretation. Personal services, supplies, materials, and utility costs would total approximately

\$164,000 per year.

DEVELOPMENT COSTS

Development of day use facilities, including \$132,360 for relocating Decker Road, would cost approximately \$1.23 million. The Park Service would seek nonfederal funding for the activity center. This estimate does not include the cost of the trail extensions to the Backbone Trail that are beyond the immediate developed area. In contrast to the Park Service's estimate, the California Department of Transportation has estimated the cost of relocating Decker Road at \$250,000, but this includes major improvements to a portion of Mulholland Highway. See table 1 for a more detailed cost estimate.

Table 1: Preliminary Cost Estimates for Alternative III

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
<hr/>				
INTERPRETIVE ACTIVITY CENTER				
(Earth-sheltered)	5,000	sq ft	150	\$750,000
AMPHITHEATER - 40 seats	40	seat	700	\$28,000
KIOSK	1	ea.	25,000	\$25,000
ENTRY SIGN	1	ea.	5,000	\$5,000
TRAIL SIGNS (wayside exhibits)	6	ea.	250	\$1,500
PARKING - 20 cars	20	ea.	1,300	\$26,000
13 horse trailers	13	ea.	2,600	\$33,800
BOARDWALK (on grade)	2,658	sq ft	8	\$21,264
FOOT TRAILS/OVERLOOKS -	0.92	mile	15,000	\$13,800
EQUESTRIAN TRAIL	0.55	mile	5,000	\$2,750
FOOTBRIDGES (wooden)	360	sq ft	18	\$6,480
UTILITIES				
Water, power, telephone (fees not included)				\$6,000
Wastewater treatment system				\$40,000
RELOCATE DECKER ROAD				
Construct 1,100' of 24'-wide road	0.21	mile	500,000	\$105,000
Obliterate old road 1,250'	0.24	mile	114,000	\$27,360
MISCELLANEOUS				
Planting, obliteration, restoration				\$25,000
<hr/>				
SUBTOTAL				\$1,116,954
Add 10% for contingencies				\$111,695
<hr/>				
TOTAL FOR DAY-USE FACILITIES				\$1,228,649
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Equestrian trail extension to Backbone Trail that are beyond the immediate developed area are not included in estimate.

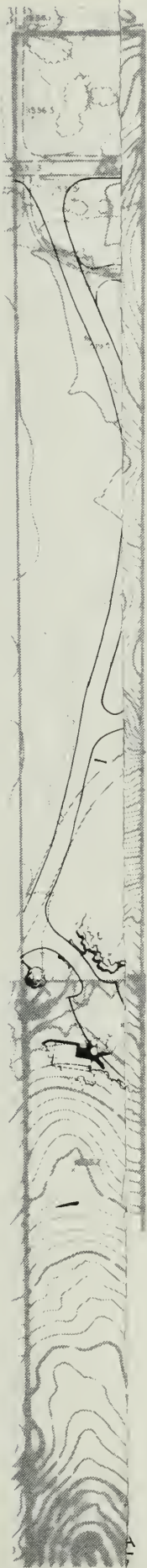
ALTERNATIVE IV: BARRIER-FREE ENVIRONMENTAL EDUCATION CAMP (Proposed Action)

DESCRIPTION








In this alternative the Decker Canyon site would be a focal point for overnight lodging, environmental education, interpretation, and day use outdoor recreation. This alternative includes the actions for day use proposed under alternative III and expands upon them to provide overnight facilities and additional day use facilities. It would be designed to serve the full population of disabled, especially the elderly and disabled persons who would come for a camping experience either alone or with their families and friends. This alternative would be unique in providing these experiences, which are commonly available to the able-bodied, for persons of any age and with any degree of disability.

The camp would provide lodging accommodations for a maximum of 75 to 80 campers. A percentage of rooms would be available for families without a disabled or senior member to ensure that overnight accommodations would serve the general public. A common kitchen in each of the three lodges would be available for those with special dietary needs or preferences. Additional facilities would include a dining hall and therapeutic pool (both reserved for campers), an equestrian facility; a director's residence and infirmary, and a storage/maintenance area. Parking areas would also be constructed.

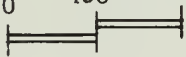
As in alternative III, this alternative includes an interpretive activity center, amphitheater, picnic facilities, trails, and relocating Decker Road.



- A INTERPRETIVE ACTIVITY CENTER AREA
- B EQUESTRIAN PROGRAM AND STAGING AREA
- C OVERNIGHT CAMP AREA

-  PEDESTRIAN/EQUESTRIAN TRAIL
-  EQUESTRIAN TRAIL TO BACKBONE TRAIL
-  PEDESTRIAN TRAIL
-  INTERPRETIVE LOOP TRAIL/BOARDWALK
-  POSSIBLE LOCATION FOR INTERPRETIVE SIGN
-  SHADE PLANTING
-  PRIMITIVE TENT CAMP

0 100 200 FEET



Alternative IV Barrier-Free Environmental Education Camp Area Relationship

Decker Canyon

SANTA MONICA MOUNTAINS NATIONAL RECREATION AREA
United States Department of the Interior / National Park Service



- A INTERPRETIVE ACTIVITY CENTER AREA
- B EQUESTRIAN PROGRAM AND STAGING AREA
- C OVERNIGHT CAMP AREA

- PEDESTRIAN/EQUESTRIAN TRAIL
- EQUESTRIAN TRAIL TO BACKBONE TRAIL
- PEDESTRIAN TRAIL
- INTERPRETIVE LOOP TRAIL/BOARDWALK
- POSSIBLE LOCATION FOR INTERPRETIVE SIGN
- SHADE PLANTING
- PRIMITIVE TENT CAMP

0 100 200 FEET



Alternative IV Barrier-Free Environmental Education Camp Area Relationship

Decker Canyon

SANTA MONICA MOUNTAINS NATIONAL RECREATION AREA
United States Department of the Interior / National Park Service

ALTERNATIVE 4 – BARRIER-FREE ENVIRONMENTAL EDUCATION CAMP – DAY USE AREA

- A: DECKER CANYON ENVIRONMENTAL EDUCATION CENTER ENTRY SIGN
Sign establishes public entrance and National Park Service presence and invites day users.
- B: INTERPRETIVE ACTIVITY CENTER SIGN AND KIOSK
Establishes pedestrian entry and welcomes day users. Kiosk provides site and park orientation and information.
- C: RAMP
- D: THANK YOU WALL
Gives prominent and highly aesthetic recognition to people who contributed to the realization of this unique facility.
- E: INTERPRETIVE ACTIVITY CENTER WITH OBSERVATION DECK ON ROOF
Serves as a staging point that welcomes day users and introduces them to the site. West side of building has area for a fireplace and permanent interpretive exhibits. East side is a flexible space for indoor programs, crafts, environmental education, offices, storage, restrooms, and library, and opens to a patio with south-facing sliding glass doors.
- F: SKYLIGHT OVER BREEZEWAY THROUGH BUILDING
A breezeway through the center of the building reinforces the indoor-outdoor relationship, provides natural ventilation, and maintains awareness of the outdoor environment. Skylight floods interior and breezeway with light.
- G: BUILDING WALL BELOW EARTH-COVERED ROOF
- H: PATIO SPACE
Informal outdoor patio provides maximum flexibility for indoor-outdoor programs and a fuel break at south-facing building opening. Sycamore plantings provide passive solar screening.
- I: AMPHITHEATER WITH FIRE RING
Takes advantage of slope and is adjacent to interpretive activity center to attract day users. Patio serves as stage area. Fire ring is within patio for safety. Multipurpose patio concentrates development and minimizes area requiring pavement.
- J: PICNIC TABLES ALONG TRAIL
Tables near trail concentrate use and are easily accessible.
- K: TYPICAL WAYSIDE EXHIBIT AND BOARDWALK SECTION OF INTERPRETIVE LOOP TRAIL
Boardwalk reinforces visitor's sensitivity of the oak and riparian area and helps protect these resources by confining use to the trail.
- L: HORSE FENCE
Fence defines equestrian use area and directs equestrians to trail. Also provides temporary tie-up for horses.
- M: RIDING RING FOR OVERNIGHT VISITOR EQUESTRIAN PROGRAM
Uses existing impacted area of road. Fence defines equestrian use and directs equestrians to trail.
- N: TRAILHEAD WAYSIDE EXHIBIT
Provides equestrian trail information and orientation.
- O: CORRALS FOR OVERNIGHT VISITOR EQUESTRIAN PROGRAM
- P: TACK AND STORAGE ROOM
Provides support for equestrian program.
- Q: PEDESTRIAN AND EQUESTRIAN TRAIL
Trail uses existing road. Equestrian and pedestrian uses are separate, on opposite sides of the trail.
- R: PROPOSED DECKER ROAD RELOCATION
- S: BACKBONE TRAIL STAGING AREA ENTRANCE SIGN

 EQUESTRIAN TRAIL

 PEDESTRIAN TRAIL

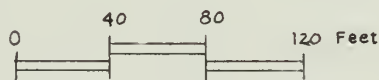
 MINOR DRAINAGE

 INTERMITTENT DRAINAGE

 PROPOSED VEGETATION

 EXISTING VEGETATION

F.F.E. PROPOSED FINISHED FLOOR ELEVATION



Alternative IV Barrier-Free Environmental Education Camp Day Use

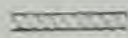





Decker Canyon

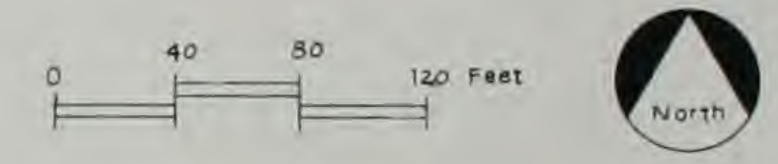
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SANTA MONICA MOUNTAINS NATIONAL RECREATION AREA

United States Department of the Interior / National Park Service



-  EQUESTRIAN TRAIL
-  PEDESTRIAN TRAIL
-  MINOR DRAINAGE
-  INTERMITTENT DRAINAGE
-  PROPOSED VEGETATION
-  EXISTING VEGETATION
- F.F.E. PROPOSED FINISHED FLOOR ELEVATION



Alternative IV Barrier-Free Environmental Education Camp Day Use

ALTERNATIVE 4 – BARRIER-FREE ENVIRONMENTAL EDUCATION CAMP – OVERNIGHT AREA

- A: RIDING RING FOR OVERNIGHT VISITOR EQUESTRIAN PROGRAM
Uses existing impacted area of road. Fence defines equestrian use and directs equestrians to trail.
- B: TRAILHEAD WAYSIDE EXHIBIT
Provides equestrian trail information and orientation.
- C: CORRALS FOR OVERNIGHT VISITOR EQUESTRIAN PROGRAM
- D: TACK AND STORAGE ROOM
Provides support for equestrian program.
- E: PEDESTRIAN AND EQUESTRIAN TRAIL
Trail uses existing road. Equestrian and pedestrian uses are separate, on opposite sides of the trail.
- F: PROPOSED SCREEN OR SHADE PLANTING (TYPICAL)
Native vegetation used consistently for screening and shade. Native vegetation proposed near buildings is managed to reduce fuel loads and old growth.
- G: TYPICAL LODGE ROOM
Earth-sheltered lodges rooms would vary in size — some larger to provide for larger families or groups. Views from lodge rooms maximize awareness of natural environment and minimize views of concrete, parking areas, and development. Lodges are located to blend into the terrain and not impact views from Mulholland scenic corridor. Concentrated design of lodges minimizes site disturbance and reduces construction costs.
- H: PATIO UNDER TREES AND ADJACENT TO KITCHEN/STORAGE ROOM (TYPICAL)
Informal outdoor space creates an environment for social groups to form at each lodge. Proximity to kitchen provides opportunity for outdoor eating. Patio space at front of lodge provides fuel break at exposed part of building.
- I: BERM
Screens view of the development from Mulholland and blends with landform.
- J: FRONT OF LODGE WITH SOUTHERLY EXPOSURE (TYPICAL)
Allows for passive solar heating in winter and provides natural light for rooms. Overhang provides shade from summer sun.
- K: BACKBONE TRAIL STAGING AREA ENTRANCE SIGN
- L: ENTRY SIGN FOR DECKER CANYON LODGE
Sign establishes public entrance and National Park Service presence.
- M: DIRECTOR'S RESIDENCE/INFIRMARY
Near entrance for easy registration and adjacent to lodge parking to eliminate need for additional road or parking, thus disturbing minimum area. Built into hill and is entirely screened from Mulholland by large knoll to north. Parking is also screened.
- N: TYPICAL KITCHEN AND STORAGE ROOM
- O: ROOM SKYLIGHT (TYPICAL)
Provides natural light to room and serves as a "window" for family members who are camping outside on the roof.
- P: SERVICE ACCESS
Directly adjacent to parking area to eliminate need for additional service road, leaving greater area of site undisturbed. Also provides direct access without impacting pedestrian spaces and views.
- Q: STORAGE/MAINTENANCE BUILDING
Near service access to minimize need for additional road. Earth-sheltered into hill.
- R: MULTIPURPOSE DINING HALL
Set into hillside for minimum visual impact. Adjacent to parking area for ease of access. Patio provides outdoor dining and gathering area for campers.
- S: THERAPY POOL
Near multipurpose dining hall to eliminate need for separate restrooms and storage area.

 EQUESTRIAN TRAIL

 PEDESTRIAN TRAIL

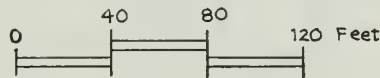
 MINOR DRAINAGE

 INTERMITTENT DRAINAGE

 PROPOSED VEGETATION

 EXISTING VEGETATION

F.F.E. PROPOSED FINISHED FLOOR ELEVATION



TO

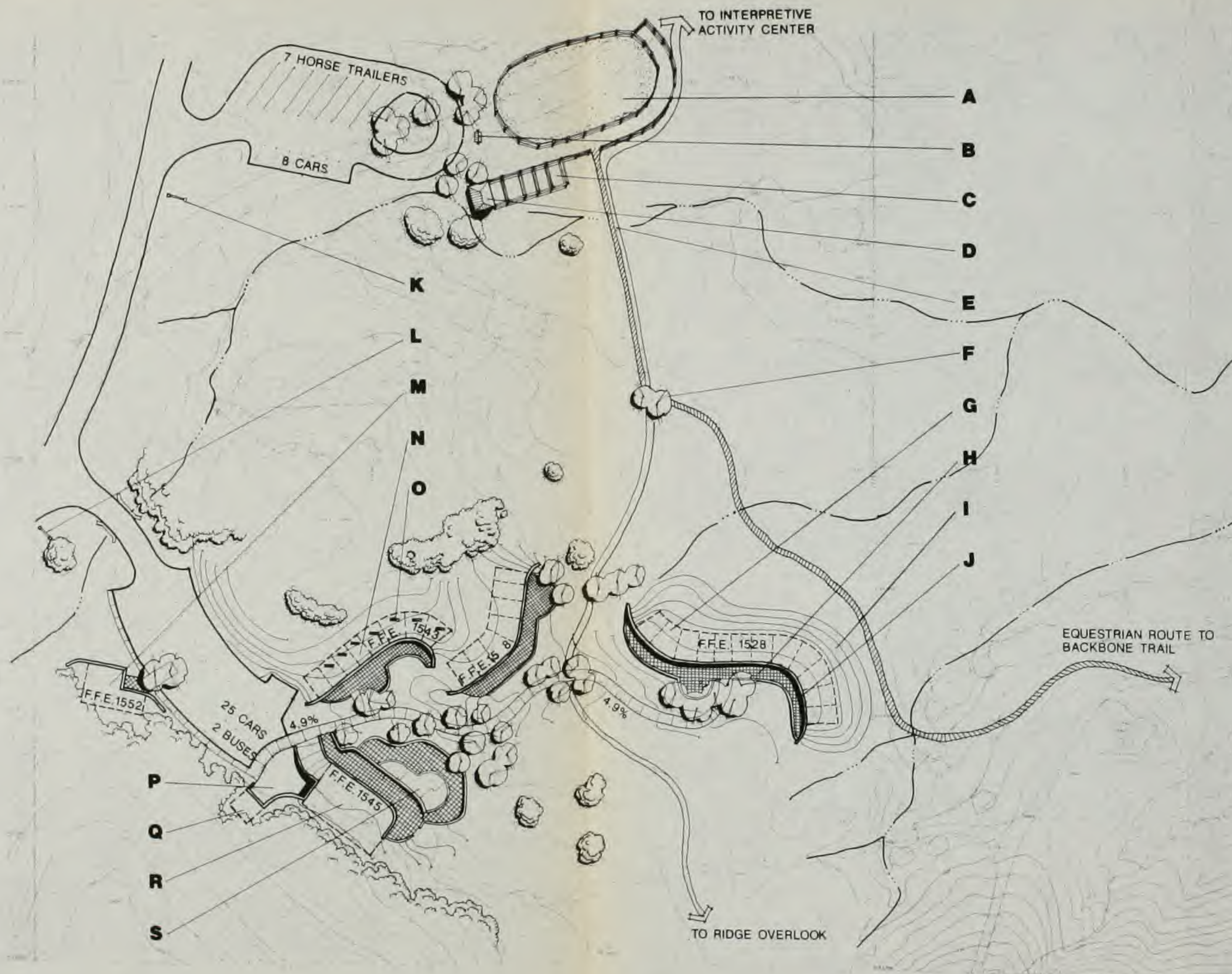
Alternative IV Barrier-Free Environmental Education Camp Overnight Camp

Decker Canyon

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SANTA MONICA MOUNTAINS NATIONAL RECREATION AREA

United States Department of the Interior / National Park Service



- EQUESTRIAN TRAIL
- PEDESTRIAN TRAIL
- MINOR DRAINAGE
- INTERMITTENT DRAINAGE
- PROPOSED VEGETATION
- EXISTING VEGETATION
- F.F.E. PROPOSED FINISHED FLOOR ELEVATION

0 40 80 120 Feet



Alternative IV Barrier-Free Environmental Education Camp Overnight Camp

Decker Canyon

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SANTA MONICA MOUNTAINS NATIONAL RECREATION AREA
United States Department of the Interior / National Park Service

COOPERATIVE PLANNING AND MANAGEMENT

The Park Service and the concessioner could cooperate to manage the activity center and provide quality programs for visitors. The Park Service could coordinate all interpretive media and assist in advertising programs and training personnel for educational and interpretive programs. Cooperation of trail clubs (hiking and equestrian) would be sought in planning and developing trails. The concessioner would be responsible for development and management of the camp and the equestrian facility; the Park Service could construct some day use facilities. Specific responsibilities for development and management of the facilities are subject to negotiation of the concession contract.

Cooperation of the state and county and the concessioner would be required to accomplish the relocation of Decker Road.

The Park Service, concessioner, and local agencies would cooperatively develop and implement a plan for emergency procedures including, but not limited to, evacuation in case of wildfires.

RESOURCE MANAGEMENT

Specific studies on the effect of the earth-sheltered construction on habitat and the effectiveness of vegetation management for fire control could be made and interpreted. Resource management projects to rehabilitate and restore roads, grasslands, and drainages to natural conditions could be done in cooperation with the concessioner. Ongoing monitoring of and programs for vegetation management of fuel loads would be required. Prescription burning

would be continued as needed to reduce fuel loads. Water quality would require ongoing sampling for public safety and resource protection. As a tributary drainage into Trancas Creek, which is a year-round creek, any impact to water quality would be carefully monitored and mitigated.

Protection of cultural resources would involve regular patrol, and the cooperation and the on-site presence of the concessioner would discourage vandalism. Protection of the site's significance to the cultural values of local Chumash Indians would be an important aspect of site management. This goal would be accomplished through protective measures discussed previously and also through interpretation of Chumash culture and land ethics. The national recreation area staff would cooperate with local native American Indians in the development of interpretive themes and exhibits. The development proposed would not affect major concentrations of artifacts.

VISITOR USE AND DEVELOPMENT

The National Park Service is mandated to provide facilities for recreational or interpretive uses that minimize impacts to resources. The proposed facilities, as described in alternative III and expanded upon in this alternative, would be designed to minimize visual and resource impacts to the extent feasible. Guidelines for developing facilities were stated in the GMP and are in the beginning of the "Alternatives" section of this document.

FACILITY DESCRIPTION

To provide overnight use for persons with any degree of disability would require specially designed lodging facilities. Most of the facilities would incorporate earth-sheltered design (see alternative III for a detailed description of this design).

All structures and facilities would be constructed according to appropriate seismic codes to help ensure visitor safety and resource and facility protection. The seismic hazards in the vicinity of Decker Canyon require that structures be able to withstand a seismic loading of 4 feet/second².

The area for these facilities has been intensively surveyed and tested using auger core for evidence of surface and subsurface cultural resources; no indications of cultural resources have been found.

Lodge Units: The camp would have 24 rooms for overnight guests. The individual rooms, each with bathroom facilities, would be arranged in three earth-sheltered lodges, with each lodge having a common kitchen/storeroom and outdoor gathering space. The lodges would vary in size from seven to 12 rooms, including the kitchens. On occasion, some rooms might be used for staff housing. Rooms would be two or three different sizes to accommodate individuals or family groups of up to six persons. The rooms would be oriented for solar exposure; skylights would provide additional natural light to the room interiors and would open for cross ventilation. Opportunities would exist for family members to sleep out on the earth-sheltered roof or at designated primitive campsites.

Dining Hall

The earth-sheltered dining hall for campers would seat up to 100 persons and could also be used for indoor activities requiring a large room. A patio area would provide outdoor dining and gathering space.

Therapy Pool

The therapy pool would be handicap-accessible and provide a therapeutic experience for campers who have difficulty with movement and body temperature regulation. The pool would not provide a recreational attraction but would allow some people the opportunity to use the camp who would otherwise find that very uncomfortable, difficult, or impossible without this therapy. The pool would be used for hydrotherapy. Also, many people with spinal injuries or multiple sclerosis have difficulty regulating body temperature, and they would use the pool to help regulate body temperature. The pool would be equipped with a ramp and lift and would be approximately 3 to 5 feet deep.

Director's Residence and Infirmary

An earth-sheltered residence for the director of the camp would provide permanent on-site housing and administrative space. A portion of this structure would be for a nurse's office and first aid station. The camp nurse would administer medications, treat minor illness, and determine when a higher level of medical treatment off-site was needed.

Parking and Maintenance

Parking for the camp would be screened by topography from view from Mulholland. All vehicular access to the camp would be contained within a central parking area, thus minimizing roadways. A small, earth-sheltered maintenance building would be adjacent to the dining hall structure. Passenger unloading, deliveries, and access to the director's residence/infirmery would be directly adjacent to the camp parking area. No vehicles would be allowed within the camp, although a broad paved sidewalk would allow emergency access to facilities.

The central camp parking area would contain two bus spaces and 25 auto spaces with approximately 16 of the auto spaces designed for the handicapped. A day use parking area adjacent to the interpretive activity center would provide 20 auto spaces including several handicap spaces. Asphalt paving would be used for these parking areas because they are expected to receive heavy use. An 8-car/7 horsetrailer parking area would serve the equestrian area. Surfacing materials such as soil cement or a soil binder could be used for this parking area. An overflow parking area for 20 vehicles and 5 horse trailers, if needed, has been identified as described under alternative III.

Interpretive Activity Center

This facility would be essentially the same as the facility described under alternative III. Included in the design would be a breezeway through the building, which would be below the skylight, and a contributor recognition wall.

The interpretive activity center would become a destination point along the Mulholland Highway for people who are pleasure-driving; here they could stroll through the exhibits, get information on other areas in the Santa Monica Mountains, picnic, take a short interpretive hike or a longer hike around the site, or prepare for a long hike along the Backbone Trail.

Trails

The trail system would be essentially the same as in alternative III, slightly expanded and with additional features to render them even more usable by the disabled and elderly. Shade areas, which could double as interpretive stations and rest areas, would be provided for health and safety along accessible trails. Approximately 2 miles of trail would be provided.

Primitive Camping

The opportunity for those wishing for a more solitary camping experience would be available at two locations removed from the camp. Access would be by trail only. Each campsite would be handicap-accessible and contain up to four tent pads; picnic tables and composting toilets would be provided. Water would not be available at the campsites.

Picnic Facilities

Ten to 15 picnic tables would be placed along the side trails to the north and south of the main walk between the parking area and the interpretive activity center.

Equestrian Program

A recreational equestrian program would be provided for campers. Four to six horses would be available for rides to destinations along the Backbone Trail. This program would be modeled after other successful recreational equestrian programs for the disabled. Staff to operate the program would be provided by the concessioner. Facilities needed would be four to six corrals, a riding ring, an office, a tack and storage room, a handicap ramp for mounting, and parking and turnaround room for loading and unloading horses and feed.

Landscaping

No ornamental landscaping and no irrigation is proposed for the site. If minimal irrigation is needed, it would only be for establishment of vegetation. Only native grasses and vegetation would be used, keeping with the goals of ecologically and visually sensitive design. Fuel levels would be monitored for fire safety, and low-fuel vegetation would be used near structures. The latest scientific information would be used for native vegetation fire control.

Utilities

Water, telephone, and electric utilities along Decker Road and Mulholland Highway provide sufficient supply and direct access to support camp development. All new utilities in the developed area would be placed underground.

The wastewater produced by the development would generally be domestic in character, with a design flow of about 6,500 gallons per day. Several site constraints limit the options for wastewater treatment and disposal: the steep-sloped topography of most of the area leaves only a few small gently-sloped sites that are suitable for wastewater disposal; archeological sites situated on prime areas suitable for wastewater disposal; an intermittent stream that bisects the area; and subsurface rock that underlays much of the area at a shallow depth. The relatively large required design flow combined with slow soil permeabilities necessitates large land areas for conventional absorption trenches or subsurface disposal beds. This limitation is further exacerbated by Los Angeles County requirements of an additional land area equal to 100 percent of original required dedicated as a back-up.

Following consultation with state and local health department authorities and additional soils tests, the use of a septic tank and seepage pits appears to be the most cost-effective solution for disposal of treated wastewater from the camp facility. Approximately 12 seepage pits 12 feet deep by 6 feet in diameter would be required. A lift station would be required to pump the wastewater from the septic tank to the distribution box uphill from the seepage pits. The various components of the system would be earth-covered and only access manholes would be visible. Wastewater from the interpretive activity center would be treated by a conventional septic system with absorption trenches. A small lift station would be required for this system. Disposal areas would be a minimum of 100 feet from streams, and a 100 percent backup area would be available for each of the systems. The systems would be designed to comply with all applicable state, county and federal regulations. Appendix C contains the complete engineering analysis for wastewater

treatment and disposal for this development alternative.

MANAGEMENT AND OPERATIONS

The Park Service and a concessioner, who would be selected by the Park Service in a competitive concession contract bid, would cooperatively manage the interpretive center and the camp. The concessioner would have primary responsibility for development. Specific requirements and responsibilities would be negotiated in the concession contract. The design concepts expressed in this plan would be a requirement for concessioner development; however, specific details beyond the level of this plan could change as final plans are prepared.

Because of the predicted demand for this type of facility, for most of the year rooms would be on a single-room reservation basis. A percentage of rooms would normally be available for families without disabled or elderly members on a first-come first-served basis. However, at certain times all the rooms could be reserved for weekend, one-week, or two-week sessions by a single group.

Day use of the site would be expected to increase with the development of picnic facilities, defined trails, and the interpretive activity center.

Some programs presented by the concessioner could be publicized by the Park Service for day use visitors. Daily activities could also be posted on an activity kiosk or board outside the entrance to the activity center. Some activities presented by the concessioner would be reserved for campers; however, many would be open to both campers and day users. Other on-site

activities could include docent- and ranger-led walks, nature-oriented crafts and outdoor education programs, campfire programs and small outdoor plays at the amphitheater, photography, and natural resource related experiments, study, and investigations.

Concessioner staff for the camp could include docent volunteers, student interns, and paid staff and would include a permanent, resident director who would be responsible for planning, marketing, and overall camp and labor management; a full-time nurse; food service personnel; professional counselors; maintenance personnel; and people to plan, organize, and conduct activities and programs. On-site housing for the camp director would be provided; other employees would live off site. On occasion, additional staff may need to live on site to serve the special needs of particular groups; this staff would be housed in lodge units.

Patrol, law enforcement, resource protection, daily coordination, and interpretation demands would all increase, requiring an increase in National Park Service staff. Daily coverage would be necessary to respond to fire and emergency medical needs and for overseeing the concession operation and providing interpretation. National Park Service maintenance requirements would also increase, requiring additional staff. Interpreters would conduct education programs (including evening programs), conduct training and coordination for the docents, and oversee programs provided by others. Park personnel increases are estimated to include three work-years for protection, two work-years for interpretation, and one work-year for maintenance for a total annual staffing cost of \$185,000.

DEVELOPMENT COSTS

Development and operation of the camp facilities would be at no cost to the National Park Service. This satisfies an important goal of the Final General Management Plan (NPS 1982a), which states:

The continuation or expansion of compatible private recreation facilities will be promoted and ways will be sought to induce private sector support and investment in new programs and facilities (overnight accommodations, equestrian centers, equipment rentals, food concessions, and ferry service). As the national recreation area is developed and interpretive activities are expanded, new areas will be sought for cosponsoring recreational activities and programs with other agencies, organizations, and private camps on public lands.

Cost estimates are based on government estimates; the concessioner's cost could be 15 to 25 percent lower than these estimates. Development of day use facilities, including the estimated \$132,360 for the relocating Decker Road (see discussion under alternative III), would cost approximately \$1.2 million. The overnight lodging facilities and equestrian center would cost approximately \$2.4 million, bringing the total cost of this alternative to approximately \$3.6 million (see table 2).

Table 2. Preliminary Cost Estimates for Alternative IV

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
<hr/>				
INTERPRETIVE ACTIVITY CENTER				
(Earth-sheltered) (E.S.)	5,000	sq ft	150	\$750,000
AMPHITHEATER - 40 seats	40	seat	700	\$28,000
KIOSK	1	ea.	25,000	\$25,000
ENTRY SIGN	1	ea.	5,000	\$5,000
TRAIL SIGNS (interpretive)	6	ea.	250	\$1,500
PARKING - 20 cars	20	ea.	1,300	\$26,000
BOARDWALK (on grade)	2,658	sq ft	8	\$21,264
FOOTBRIDGES (wooden)	4	ea.	1,620	\$6,480
FOOT TRAILS/OVERLOOKS	1.4	mile	15,000	\$21,000
EQUESTRIAN TRAIL	0.43	mile	5,000	\$2,150
UTILITIES				
Water, power, telephone (fees not included)				\$6,000
Wastewater treatment system				\$40,000
RELOCATE DECKER ROAD				
Construct 1,100' of 24' wide road	0.21	mile	500,000	\$105,000
Obliterate old road 1250'	0.24	mile	114,000	\$27,360
MISCELLANEOUS				
Planting, obliteration, restoration				\$25,000
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SUBTOTAL				\$1,089,754
Add 10% for contingencies				\$108,975
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TOTAL FOR DAY-USE FACILITIES				\$1,198,729
<hr/>				
CAMP FACILITY				
			UNIT COST	TOTAL
<hr/>				
LODGE UNITS (E.S.)	11,490	sq ft	100	\$1,149,000
DINING/MULTIPURPOSE BLDG. (E.S.)				
including pool equip. space	2,500	sq ft	100	\$250,000
DIRECTORS RESIDENCE/INFIRMARY (E.S.)	1,500	sq ft	100	\$150,000
MAINTENANCE BUILDING (E.S.)	400	sq ft	75	\$30,000
THERAPY POOL	1	ea.	25,000	\$25,000
PARKING - 25 cars, 2 buses	27	ea.	1,300	\$35,100
CONCRETE PAVING - (colored)	2,170	sq yd	81	\$175,770
EQUESTRIAN PARKING 8 cars	8	ea.	1,300	\$10,400
7 horsetrainers	7	ea.	2,600	\$18,200
STABLE (20'x20')	400	sq ft	55	\$22,000
EQUESTRIAN RIDING RING				
380' 3-rail fence	380	lin ft	12	\$4,560
Corrals - 330' 3-rail fence	330	lin ft	12	\$3,960
UTILITIES				
Water, power, telephone (fees not included)				\$40,000
Wastewater treatment facility				\$237,000
<hr/>				

SUBTOTAL	\$2,150,990
Add 10% for contingencies	\$215,099
	<hr/>
TOTAL FOR CAMP DEVELOPMENT	\$2,366,089
	<hr/>
TOTAL FROM DAY-USE FACILITIES	\$1,198,729
	<hr/>
GRAND TOTAL ALTERNATIVE IV	\$3,546,818

Equestrian extension trail to the Backbone Trail beyond the immediate developed area of the campsites is not included in estimate. Estimate does not include furnishings, exhibits, specialized equipment, and the facilities for the primitive campsites.

AFFECTED ENVIRONMENT

INTRODUCTION

The following section provides an orientation to the setting in which the proposed actions take place. More detailed information is available in the Final General Management Plan (GMP) (NPS 1982a), the Natural Resource Management Plan (NRMP) (NPS 1982f), and other park-related documents from which most of the following information has been extracted. Additionally, the Final Environmental Impact Statement (FEIS) (NPS 1982b) and the NRMP contain lists of the common and scientific names of species of plants and animals, including special status species, which have been identified as residing in, using, or migrating through the Santa Monica Mountains National Recreation Area. The "Fire Management Plan" (NPS 1986a), which is an addendum to the NRMP, contains extensive discussions relating to the national recreation area's fire management policies and the fire ecology of the various Santa Monica Mountains vegetative communities (see bibliography).

SOCIOECONOMIC ENVIRONMENT

LOCATION

The Santa Monica Mountains in southern California encompass approximately 344 square miles, about 46 miles in length and 8 to 10 miles in width. The mountains are bounded by the city of Los Angeles on the east, the Pacific Ocean on the south, the Oxnard Plain on the west, and the Simi Hills and San Fernando Valley on the north. Lands at the far eastern end of the national recreation area are within the city limits of Los Angeles; most of the central lands are within Los Angeles County; and the westernmost lands are within Ventura County.

The Decker Canyon site is at the junction of Mulholland Highway and Decker Road (CA 23) in the west-central portion of Santa Monica Mountains National Recreation Area in Los Angeles County.

ACCESS AND TRANSPORTATION

The Ventura Freeway (US 101) is the major east-west transportation corridor between Los Angeles, the Oxnard-Ventura area, and points north along the coast. The Pacific Coast Highway (CA 1) parallels Santa Monica Bay in an east-west direction. Major north-south corridors crossing the mountains include Topanga Canyon Road, Las Virgenes-Malibu Canyon Road, and Kanan Dume Road. Decker Road also is a north-south corridor but is a minimal standard road. Mulholland Highway (in some segments called Mulholland Drive) generally follows the crest of the mountains from east to west, turning south

a few miles west of Decker Canyon to reach the coast.

Access to the Decker Canyon site is either by Decker Road, which intersects Mulholland Highway within the site, or by Mulholland Highway. The Decker Road/Mulholland Highway intersection is dangerous because of limited sight distance and the angle of the intersection. Because Mulholland is a narrow, winding road, the most convenient and safest route from the Ventura Freeway to Decker Canyon is by way of Kanan Dume Road to Encinal Canyon Road to Lechusa Road and then north on Decker Road to the site. In 1983, the daily traffic count at the intersection of Mulholland Highway and Decker Road was approximately 260 automobiles. No municipal or county bus lines serve the area.

UTILITIES

Utilities within or adjacent to the site include three-phase electricity adjacent to Decker Road, municipal water within the Mulholland Highway right-of-way, and telephone lines along Mulholland Highway. These services appear to be adequate for all development alternatives.

Municipal wastewater treatment facilities are not available on site. If wastewater treatment facilities were necessary for proposed development, the site presents many constraints, such as steep-sloped topography, known archeological sites, and subsurface rock that underlies much of the area and limits soil absorption systems. (A detailed analysis of the site constraints can be found in appendix C.)

LAND USE AND OWNERSHIP

Land Use

A mix of public and private land uses exists within the national recreation area boundary. Many of these uses are compatible with the legislative goals of the area and contribute to the rural landscape character. Other existing and potential uses, particularly large-scale residential development, are or could be disrupting the natural environment and, as they continue, will result in a gradual change of the remaining natural and cultural values and the rural character.

The growth in the economy and population of the Los Angeles/Ventura region is spurring the continuing transformation of land use within the national recreation area from rural to urban. Most of the interior portion of the national recreation area is still sparsely populated except for several older residential areas such as Topanga, Monte Nido, Malibu Bowl, Cornell, and Lake Sherwood. However, newer developments such as Calabasas Highlands and Headlands are becoming more common and threaten the open-space characteristics of the mountains.

Landownership

Within the national recreation area boundary of 150,000 acres, approximately 12,000 acres are owned by the National Park Service, 40,060 acres are state and locally owned, and 98,000 acres are privately owned.

The Decker Canyon site is in a primarily rural setting, with single-family residences/small ranches along both Mulholland Highway and Decker Road;

approximately nine of these are adjacent to the property line. detention/fire camp is nearby on Encinal Canyon Road.

ZONING

The Decker Canyon property is designated into three land use categories in the County of Los Angeles Local Coastal Program's Malibu Land Use Plan. The northwest corner of the Decker Canyon property west of Decker Road is category 12 - rural commercial; the centermost section east of Decker Road is category 6 - residential I (one dwelling unit/1 acre); and the southeast portion is category M2 - mountain land (one dwelling unit/20 acres). National Park Service land classifications (contained in the Final General Management Plan) place the Decker Canyon property in two zones: watershed buffer and scenic and resource-oriented recreation (where environmentally compatible recreational activities are permitted). Should the proposed action be approved, the development site would be reclassified as a structured recreation and park operations area and added as an activity site, constituting an amendment to the Final General Management Plan. The constraints on development imposed by the Mulholland Scenic Parkway Corridor - A Scenic Assessment (NPS 1984d) apply to the property.

VISITOR USE/INTERPRETATION/RECREATION

About 37-40 million people visit the public lands in Santa Monica Mountains National Recreation Area each year, with most of the use occurring at beaches. Visitors are from all age groups, ethnic backgrounds, and locales. Of these visitors, approximately 5 percent are non-English speaking, 30

percent are from minority groups (predominantly Hispanic and Oriental), and an estimated 10 percent have physical, sensory, or mental handicaps. Over one-half million people visited National Park Service areas within the national recreation area in 1985. Private camps and recreation facilities boost this annual visitation for recreational use even higher. The state, counties, cities, and private groups also provide many recreational opportunities in the mountains. Many of these facilities are partially accessible to disabled populations, although barriers remain. Some areas are occasionally overcrowded and are experiencing excessive demand; other areas offer a quiet retreat from large numbers of people. The emphasis at most of the activity sites is on water-oriented activities at beaches or on self-exploration and interpretation of the natural mountain environment. The experience is nature-oriented outdoor recreation through activities such as camping, hiking, horseback riding, picnicking, and nature walks. These activities are mostly unstructured, personal, and require a minimum of supervision and development.

Several private facilities provide compatible recreational opportunities and protect important natural and cultural areas, and many of these provide a broader variety of activities and facilities than do public agencies. A 1981 report done for the national recreation area identified seven camps within the national recreation area boundary that provide opportunities for special populations. Three of these camps are for disabled children and three are church camps that serve the disabled only incidentally. Although these camps meet their intended purposes, none meet the needs of families or individual adults seeking outdoor recreation, and virtually all operate full time only in the summer. To meet the needs of disabled adults, existing facilities

would have to be retrofited at great expense, and private camps would have to change the focus of their programs. It is unlikely that private camps can fill this void.

A private market analysis of the seven-county southern California region prepared for Total Access Camping (a private nonprofit organization) indicated a disabled population of approximately 1.1 million (out of nearly 14 million) residents. Ventura, Los Angeles, and Orange counties have the largest concentration of the disabled in the region--approximately 841,000. In addition, the independent elderly population (those not confined to an institution) in the seven-county region approaches 1.4 million. Several organizations serving the disabled and elderly were contacted concerning the barrier-free camp concept. Virtually all were supportive, although their needs varied depending on the specific population served. It was the conclusion of the analysis that a barrier-free camp targeted towards families and adult individuals would enjoy strong support and a high degree of utilization.

The Decker Canyon site is currently used informally for picnicking and hiking. There is some off-road vehicle use, which has caused some damage. The diverse resources in a relatively compact area offer excellent opportunities for interpretation of representative examples of several Santa Monica Mountains ecosystems.

When completed, the Backbone Trail will be a continuous, 55-mile long, hiking and horseback riding trail, beginning at Will Rodgers State Historic Park on the western edge of the metropolitan Los Angeles area and continuing along the crest of the Santa Monica Mountain range to the beach in Point Mugu State Park. Because the trail will be continuous, accessible to urban areas,

available to the public, and because it traverses significant scenic features, it meets all criteria necessary to qualify as a national recreation trail. The Decker Canyon site could become a staging area along the Backbone Trail.

CULTURAL ENVIRONMENT

Evidence of man's early existence in the Santa Monica Mountains is plentiful. The Santa Monica Mountains have high concentrations of archeological resources as measured by the number of sites per acre surveyed. The earliest archeological remains found in the vicinity date to before 10,000 B.C. Three distinct cultural groups occupied the area between the first evidence of man and the arrival of Spanish explorers. All three of these cultures sustained themselves through hunting, gathering, and fishing. These three cultures may have been separate groups of people or one group that experienced cultural change. The people encountered by the Spanish may have been descendants of these earlier cultural groups.

Historically the Santa Monica Mountains were inhabited by the Chumash and Gabrielino Indians. They probably lived in permanent villages near perennial water sources and used seasonal gathering camps. Various land and sea animals were hunted, and acorns and other plants and seeds were gathered. Many rock art sites exist in the mountains, some of which may have been associated with religious ceremonies. The Chumash occupied the land west of a division somewhere between Topanga Canyon and Malibu Creek, and the Gabrielino occupied the land to the east. The Santa Monica Mountains were part of the transition zone between these two complex cultures.

Although the Chumash and Gabrielino were very different in language, religion, and values, they were similar in material culture and technology. Both conquered the treacherous ocean currents to inhabit the Channel Islands. They used ocean-going plank boats called tomols, which were unique to the

Chumash and Gabrielino, to fish and trade between the coast and the islands. Both cultures were known for elaborately carved wooden bowls and fine basketry. They had large permanent villages with populations of up to one thousand. Houses were made of willows and grasses or reeds. The sweathouse (temescal) was a distinctive and significant structure. The Chumash and Gabrielino cultures were the most populous, wealthy, and powerful of the native American Indian groups in California at the time of the founding of the California missions. Today thousands of nonreservation Chumash and Gabrielino people in the Los Angeles/Ventura metropolitan area continue to celebrate many aspects of their heritage.

Early Spanish explorers traveled through the Santa Monica Mountains, although not necessarily through the Decker Canyon property. From 1764 to 1823 Spanish Franciscan Priests established 21 missions in California in an attempt to assert Spanish rights in the new world and win converts to Christianity. Spain granted a few private land concessions with title retained by the Spanish crown. In 1825 the area formally became a territory of the Republic of Mexico. The property has remained undeveloped, and, with the exception of a few primitive roads, there is no evidence of historic resources on the property.

Archeological surveys indicate three areas with concentrations of prehistoric artifacts near the part of Decker Canyon that is being considered for development. The construction of Decker Road and grading activities previous to National Park Service ownership of the property have possibly disturbed other artifacts; other portions of the site do not appear to have been disturbed by artifact collectors and recent land alteration. Overall, the site is considered well preserved. The initial archeological study required

the reevaluation of alternatives for the placement of facilities, particularly the facilities for wastewater treatment.

PHYSICAL ENVIRONMENT

GEOLOGY

Many steep, north-south canyons that drain directly into the Pacific Ocean dissect the mountains. The nearly 45-mile coastline has sandy beaches and rugged cliffs. Sandstone Peak, the highest elevation, is 3,111 feet and commands a sweeping view of the interior mountains and the Pacific Ocean. The mountains were formed as a result of uplifting, folding, faulting, and erosion. The highly erodible, complexly folded and faulted rocks yield numerous exposed bedrock formations. Rock outcrops, which can become rockfall hazards during rainstorms and severe earthquakes, are common. The Decker Canyon property, averaging 1,500 feet in elevation, exhibits typical though not outstanding examples of the region's geology.

SEISMOLOGY

Southern California is well known for its history of seismic activity. The San Fernando Valley, which is directly north of the Santa Monica Mountains, suffered extensive damage during the 1971 earthquake. The Santa Monica Mountains are in an area of relatively quiet seismic activity. During historic times, no major earthquakes have originated within this mountain range. Two faults border the area. To the south is the Malibu Coast-Santa Monica-Raymond Hill fault, and along the northern side is the Simi-Northridge-Santa Susana-Verdugo fault. Because of the rural character and open space within the mountains, major potential for damage would stem from

landslides.

SOILS

Alluvial soils in the elevated Santa Monica mountain valleys are deep enough to support agriculture. However, the loosely consolidated alluvial soils in the valley bottoms are subject to moderate liquefaction and cannot support structures during strong earthquakes. The majority of the soils on the slopes are porous, stony in texture, very shallow, and highly susceptible to erosion if exposed. Some soils, when stripped of protective vegetation (e.g., by fire or development), will flow as mud if saturated by heavy rains. Chaparral soils sometimes develop a relatively water- and erosion-resistant layer after a fire resulting from plant chemicals.

Two borings were collected at the Decker Canyon site on September 20, 1985, to a depth of 20 feet. Three additional borings were taken on December 18, 1986. Samples were taken at varying intervals and classified as to grain size, density, and characteristics of the underlying soils. Bore hole locations and the logs of the borings are shown in exhibits II and III respectively in appendix C.

Much of the bowl area of the property was bulldozed in preparation for development prior to acquisition by the National Park Service. This action disturbed the soil, removed chaparral vegetation, and generally leveled approximately 7 acres of the bowl.

CLIMATE/AIR QUALITY

A Mediterranean climate prevails over the east/west-trending Santa Monica Mountains. Winters are short, mild, and wet, and summers are generally warm and dry. Summer temperatures are moderated along coastal bluffs and beaches and in near-coast canyons by cooler marine air and summer coastal fog. During late summer and fall, hot, arid, Santa Ana winds blowing from the deserts to the east sometimes gust more than 40-50 miles per hour (adding to the potentially dangerous fire conditions in the mountains).

Temperatures vary according to elevation and proximity to the ocean. Moist ocean air masses have a moderating effect along the coastal slopes and canyons, causing cooler temperatures in the summer and warmer temperatures in the winter than those occurring in inland portions. Average monthly temperatures in January range from 38 to 68 degrees Fahrenheit for the inland portions and 48 to 64 degrees along the coast. In July average temperatures range from 56 to 95 degrees inland and 58 to 75 degrees along the coast. The Decker Canyon site, approximately 3.5 miles from the coast at an elevation ranging from 1,325 to 1,750 feet, lies in an intermediate zone between the coast and inland mountains. Temperatures are moderate during the summer, although coastal fog seldom directly affects the site.

Annual rainfall varies markedly from year to year. A rainfall monitoring station within 2 miles of the site has been in operation since 1956. Mean annual rainfall in the upper tributary of the Trancas watershed where the Decker Canyon site is located is approximately 20 inches annually, with a range of 8.58 inches minimum and 42.91 inches maximum. The historic recorded monthly totals range between a minimum of 0.00 inches and a maximum of 23.07

inches. Almost all rain occurs in the months of October through May, although rainfall has been recorded in modest amounts in every month of the year and all months except December have records of no rainfall.

The mountains are most enjoyable to visitors in the winter, spring, and early summer when the temperatures are cool and the rains have brought out lush stands of grasses and wildflowers.

The south-coast region of California has the poorest air quality in the state, and national and state ambient air quality standards for major pollutants are regularly exceeded. The standards set levels believed to be acceptable in terms of long-term effects on health, aesthetic values, and property. Air quality in the Santa Monica Mountains is generally considered to be better than in most parts of the south coast region because it is a largely undeveloped area. The legislation that established the national recreation area recognized the value of the mountains as an airshed for Los Angeles. The mountains are to be managed to preserve their public health value as an airshed because air flow is generally onshore over the mountains and into the populated Los Angeles Basin and San Fernando Valley.

Mobile sources of air pollution (i.e., vehicular traffic) in the south coast air basin at present account for about two-thirds of the components of the most regionally serious air pollutants--oxidant-forming emissions. Photochemical oxidants are produced by sunlight-stimulated chemical reactions between reactive hydrocarbons and oxides of nitrogen. This reaction occurs most frequently in late spring, summer, and early fall when there is an abundance of sunlight.

According to the 1977 amendments to the federal Clean Air Act, the national recreation area is currently designated a class II area for the prevention of significant deterioration of air quality and may not be reclassified lower. This means that ordinarily maximum allowable incremental additions to baseline yearly pollutant levels as specified in the amendments are applicable here.

HYDROLOGY/WATER QUALITY

Most stream courses in the mountains are ephemeral, carrying water only part of the year; however, some of the major canyons in the mountains have perennial, spring-fed streams. Most of these streams have natural channels that are extremely attractive sites for nearby development but that are prone to flooding and mud slides during heavy rainfall. Both major and minor streams support riparian vegetation. These streams are often the only source of water for wildlife during the summer months, as ponds and lakes are very few and almost exclusively man-made. The Decker Canyon site contains one ephemeral stream, with the potential for two to three flowing springs depending on rainfall volumes. The amount of water discharged appears to be intermittent. There are areas on the property with limited ponded supplies year-round, originating from groundwater sources in the area. Domestic water supplies are mostly imported from the Sierra Nevada Mountains or sources elsewhere inside and outside of California.

Water quality in the national recreation area is influenced by activities within and outside the boundary. As more natural areas upstream are disturbed by residential development, runoff and the sediment load

transported by streams are increasing. Pollution of surface waters is also increasing with additional residential development because existing sewage treatment facilities occasionally malfunction or are stressed beyond their capacity, resulting in discharge of untreated or partially treated sewage into watercourses and ultimately the ocean. Septic tanks and leachfields are used throughout the Santa Monica Mountains. When poorly maintained or inappropriately located, these systems contribute to water pollution of surface and ocean water.

There are no site data available for major ions, cations, heavy metals, and pesticides. The water quality for the site is expected to be good during the wet season when the stream is flowing because there is limited upstream development or impacts.

Water quality tests for fecal coliform bacteria contamination were conducted by the national recreation area's Division of Resource Management on July 11, 1985. It was determined that the extremely limited fresh waters were contaminated with a high number of fecal coliform. Test results ranged from 1,600 to 3,000 fecal coliform/100 ml of water tested. This range is well above the EPA limits for primary and secondary contact by the public. This contamination can probably be related to wildlife species (especially birds) that use this area for water supply. It is anticipated that during the rainy season this contamination would fluctuate and is expected to be below 200 fecal coliform/100 ml, rendering the surface waters safe for public contact.

NOTHING TO
BASE THIS
ON -
TYPICALLY
HIGHER DURING
RAINY

FLOODPLAINS AND WETLANDS

The National Park Service has developed final procedures for implementing Executive Orders (EOs) 11988 and 11990 (see appendix B), which were followed in this planning effort. The Decker Canyon floodplain has not been mapped. The small size and relatively steep drainage basin makes flooding an unlikely event within the area proposed for development. There is a 1/2-acre seasonal wetland area within the bowl area. The flowing stream occurs irregularly, usually only during the rainy season between October through May. Plant species such as meadow rue, threadtorch, sycamore, willow, big-leaf maple, and rushes, among others typically associated with ephemeral streams, are found here. This area is considered a wetlands as defined in EO 11990, "Protection of Wetlands."

Should map

BIOLOGICAL ENVIRONMENT

The following sections are excerpted from the Natural Resource Management Plan (NPS 1982f), which contains a detailed inventory of plant and animal species found within the national recreation area and should be referred to for more detailed information. The following discussions will, generally, discuss only those species expected to be found at the Decker Canyon site.

VEGETATION

The dominant plant communities in the Santa Monica Mountains are chaparral and coastal sage scrub. These plant communities grow well in moisture-scarce environments like those found on the steep slopes of the mountains. Riparian woodlands, southern oak woodlands, valley oak savannahs, and grasslands are much less extensive and accordingly more critical for wildlife. Riparian areas commonly support cottonwoods, big-leaf maples, white alders, western sycamores, willows, and a variety of shrubs and herbs. Valley oaks, coast live oaks, and California black walnuts typify oak woodlands; associated understories differ greatly. Relatively undisturbed native perennial grasslands can still be found in a few locations in the mountains.

The Decker Canyon site has four of the seven plant communities represented in the national recreation area and is typical of the ecosystems found in the western Santa Monica Mountains. These plant communities are riparian, grasslands, southern oak woodland, and chaparral.

The riparian community, which is approximately 1 acre, is the most sensitive of the habitats found on the site. This woodland riparian community expresses a distinct "forest" type structure and is mainly composed of trees such as sycamore, coast live oak, California bay laurel, willow, and big-leaf maple. Understory species typical of woodland riparian communities include maidenhair fern, giant chain ferns, Humbolt lilies, stream orchis, and various forbs, grasses, and rushes. As the seasonal stream courses through a series of exposures, several species of sedges and rushes seasonally occur. A few of the infrequently found mountain plants, such as meadow rue and threadtorch, can be seen along the stream.

The grassland that occurs on the site is composed largely of introduced Mediterranean annuals, which out-competed and largely replaced the native perennial species. These flat grasslands were brushlands that have been bulldozed. There is a conspicuous absence of native grassland indicator species such as bulbs and native bunchgrasses. Native perennial bunchgrasses were the original grassland cover type before they were replaced by cultivation, grazing, and urban development. The perennial grassland supported abundant wildflowers during spring and remained green throughout the summer droughts. The original species composition is unknown. A representative assemblage of native bunchgrasses can be found in La Jolla Valley Grassland Preserve in Point Mugu State Park. The natural ecosystems of flat land are disappearing because of development in the Santa Monica Mountains, and the Decker Canyon site presents an opportunity to manage for ecosystem restoration.

Occurring near the riparian zone at Decker Canyon is a small, 1-acre, southern oak woodland community. These woodlands occur as islands within the

chaparral, preferring areas with deep, moist soil--usually in the canyon bottoms and on the north-facing mountain slopes. Moisture is held within the leaf litter, which decays to form a rich topsoil. Species common to this community include the coast live oak, toyon, giant wildrye, and poison oak. Coast live oaks provide shade for the grasses and scattered shrubs of the understory. Resprouting freely from the tree's trunk and branches, coast live oaks have thick bark that protects them from fire. However, intense fire associated with the fuel loading within the neighboring chaparral can kill coast live oaks.

The most extensive vegetative community at the Decker Canyon site is chaparral. One of the most characteristic plant communities in California, chaparral occurs only in the California Floristic Province. Chaparral is dense, often impenetrable, and notably deficient in trees and herbs. The ground underneath or among chaparral shrubs is often completely devoid of herbaceous plant species. In areas where chaparral is not a climax plant community, it is likely to be replaced successionally by one of the various woodland communities present in the vicinity. Seedlings among the chaparral shrubs eventually increase in size and abundance, and the chaparral shrubs, correspondingly, begin to decline. However, there are areas where chaparral is maintained because the local soil conditions are unsuitable for the establishment of tree species. In these circumstances, chaparral is a climax plant community. Such is the case at Decker Canyon.

Chaparral can be divided into two phases:

South-slope chaparral, containing mostly chamise and bigpod ceanothus, occupies a small portion of the site and is found on slopes facing

coastward. This community is locally uncommon in the Decker Canyon site, although it is abundant in other areas throughout the national recreation area.

North-slope chaparral has a higher species diversity than south-slope chaparral because of higher moisture retention (less direct sun). Species that typically dominate this community include green bark ceanothus, hollyleaf cherry, scrub oak, and toyon. North-slope chaparral communities may also contain a wide variety of woody vines and other shrubs such as mountain mahogany, sugarbush, and manzanita.

The shrubs that dominate chaparral are generally rather low, averaging between 3 and 6 feet tall, although individuals occasionally may reach up to 10 feet.

A prescribed burn conducted in July 1983 and a wildfire in October 1985 produced magnificent displays of several species of Phacelia. Nuttall's snapdragon, occurring infrequently in the mountains, also appeared after the 1985 fire. Dicentra ochroleuca occurred in massive displays during the second year of regrowth, identifying fire as a critical factor in the life cycle of this species.

WILDLIFE

The Santa Monica Mountains support an abundant and diverse wildlife network that is dependent upon the cyclic natural events inherent to the chaparral environment. These wildlife populations are unique in respect to their proximity to one of the most urbanized areas of the world. Some areas in the

mountains and along the seashore have been severely impacted by urban development. In spite of this development, viable wildlife populations within the mountains are maintained through: 1) preservation of lands by state and local government and private groups, 2) difficult accessibility of some portions of the mountains, and 3) the high bioproductivity associated with a Mediterranean-type ecosystem. The quality of wildlife habitat is directly related to the diversity and characteristics of vegetation communities that provide forage, protection, and locations for nesting and dwelling. The relationship between vegetation cover and wildlife habitat is discussed below:

Riparian - High bioproductivity: year-round moisture attracts wildlife species; multilayered vegetation strata provide many niches for fauna to inhabit (for nesting, foraging, and protection); canopy provides habitat for birds, small mammals, and insects; understory furnishes forage for birds and protective cover for larger mammals; the herbaceous ground cover provides forage opportunities for the entire spectrum of wildlife species (aquatic life forms, insects, reptiles, amphibians, and mammals).

Grassland - High bioproductivity: provides forage for herbivores; is primary habitat for small mammals; available seeds and herbaceous shoots attract wildlife species; abundant small mammal populations (rabbits, ground squirrels, gophers, meadow voles) furnish a primary food source for raptors and other larger mammals (bobcats, grey fox, coyotes, and long-tailed weasels).

Chaparral - Low bioproductivity: provides cover for large mammals;

produces seeds for birds and small mammals; and serves as major component of mule deer diet. Habitat potential is directly related to the age structure of the chaparral--old-growth stands (exceeding 15 years) are low in nutritional value for herbivores because of a large percentage of dead biomass and younger chaparral stands provide resprouting vegetation and new herbaceous growth that is highly nutritional browse for a wide range of wildlife species. During the winter rainy season the vegetation species "green-up," increasing nutritional qualities for deer and other species.

Mammals

Locally rare mammals found in the Santa Monica Mountains include the ring-tailed cat, long-tailed weasel, badger, and mountain lion. The presence of mountain lion is significant in relation to the urbanized Los Angeles area. Population estimates for 1981 ranged from eight to 15 individuals based on local observations, area population estimation, and home range studies conducted by the California Department of Fish and Game. During 1981, nine mountain lion sightings were reported within the Santa Monica Mountains (Wildlife Observation System, National Park Service). Several sightings were within residential areas of the wildland/urban interface. Since then, available habitat for mountain lions has unquestionably been reduced through urban spread and development. Correspondingly, the number of individual mountain lions has probably been similarly reduced throughout the Santa Monica Mountains.

Herbivores. The nocturnal California mule deer is a large, transient

herbivore occasionally found in Decker Canyon, attracted to the site while searching for food and water. There are many diverse species of rodents at Decker Canyon, especially in the chaparral habitats. Common species include ground squirrel, pocket gopher, deer mouse, pacific kangaroo rat, pocket mouse, California vole, and dusky-footed woodrat. An occasional resident of the riparian and southern oak woodland communities is the eastern fox squirrel. The desert cottontail and bush rabbit are also found at Decker Canyon.

Omnivores and Predators. Predators and omnivores are mostly shy, reclusive, and nocturnal animals whose secretive habits provide little opportunity for human sightings. Their presence is usually documented through the presence of scat and tracks. They are occasionally seen at night by people driving their vehicles.

Omnivores are opportunistic feeders, consuming a wide variety of plant and animal material, including carrion, nuts, fruits, berries, foliage, insects, and other animals. Principally, however, they feed on smaller animals, especially rodents, reptiles, and birds. Omnivores tend to range over wide areas in their search for food. They reside mostly in shallow burrows in brushy areas, natural rock crevices, small caves, and tree hollows. Resident and transient omnivores found at Decker Canyon may include grey fox, ring-tailed cat, coyote, raccoon, and striped skunk. Predatory mammals that may reside in or range through the Decker Canyon property include mountain lion, bobcat, badger, long-tailed weasel, and several species of bats.

Fish

Because of the lack of permanent free water, there are no fish at Decker Canyon.

Birds

A wide variety of bird species reside in, migrate through, or use Decker Canyon as part of their home range. The grassland, chaparral, oak woodland, riparian zone, and wetlands provide year-round or seasonal habitat for doves, pigeons, swifts, hummingbirds, woodpeckers, flycatchers, swallows, jays, bushtits, nuthatches, wrens, thrashers, blackbirds, finches, and sparrows, among others. Throughout the Santa Monica Mountains raptors are commonly sighted. The Decker Canyon site provides good hunting grounds for these birds of prey. Although there are no known active raptor nests in Decker Canyon, deep holes and shelves in cliff faces and high rock outcroppings provide ideal nesting sites for golden eagles, prairie falcons, and turkey vultures. The oak woodland and riparian zone canopy could provide nesting habitat for Cooper's , red-tailed, and red-shouldered hawks, white-tailed kites, American kestrel, and various species of owls. Although not currently nesting at the site, these birds have been sighted in the area. Other raptors that could be expected here include barn, great horned, screech, burrowing, and long-eared owls.

Amphibians

A variety of newts, salamanders, toads, and frogs, which are dependent on moist environments for survival and reproduction, can be found at Decker Canyon. The ephemeral creek within the riparian zone is a critical reproduction habitat for most of these species, which include the California newt, western spadefoot toad, California western toad, southwestern arroyo toad, California treefrog, and Pacific treefrog.

Also found within the riparian zone, as well as other areas of Decker Canyon, are the Monterrey red, garden slender, and aboreal salamanders. These amphibians do not require free water to reproduce, preferring instead to lay their eggs in dark, moist areas under logs, rocks, and other objects.

Reptiles

There are a variety of snakes and lizards that can be found at Decker Canyon. In the riparian zone the red-sided garter snake is a common resident. Throughout Decker Canyon the California Mountain king snake and its subspecies, the San Diego Mountain king snake (which is listed as rare by the California Department of Fish and Game) may occasionally be found. There are three species of poisonous snakes in the Santa Monica Mountains, and all can be expected to be found at Decker Canyon. The San Diego night snake and the California lyre snake are both rear-fanged species with somewhat toxic saliva and are not generally considered hazardous to humans. The San Diego night snake is mostly found in the chaparral and in some rocky areas; the California lyre snake is more of an inhabitant of rocky areas. The western rattlesnake is a resident of all habitats of Decker Canyon and is found

primarily in rocky areas, grasslands, and brushy areas. The venom of all rattlesnakes is toxic to humans.

The site provides excellent habitat for a variety of lizards. Species that inhabit the area include the San Diego coast horned lizard and the silvery legless lizard (both considered locally rare), the Great Basin western fence lizard, the California side-blotched lizard, western skink, Gilbert's skink, coastal western whiptail, and the San Diego southern alligator lizard.

SPECIAL STATUS SPECIES

The Decker Canyon site has been evaluated for the presence of species on the federal (50 CFR 17.11 and 17.12) and state of California (California Department of Fish and Game 1980) lists of endangered and threatened species. No such species were identified. However, suitable habitat does exist for the San Diego Mountain king snake and the Least Bell's Vireo, listed as rare and endangered, respectively, by the state of California. The Least Bell's Vireo is also listed as a federally endangered species. It is uncertain whether these species actually do use the site; their presence has not been documented by visual observation or any other means.

FIRE MANAGEMENT

All wildfires are totally suppressed. Large fuel loads of dry fuels contribute to fires burning at a high temperature and make containment difficult.

The chaparral ecosystem has evolved with fire and incorporated fire into its reproductive process. Many seeds require exposure to a certain temperature before germination can occur. Some nutrients that have been locked up in dead brush are released back into the soil as ash. The ground is cleared of thick brush and sunlight can reach the germinating seeds; with the improved light conditions, the absence of root competition, and the vaporization of allelopathic compounds of shrubs, a lush herbaceous annual flora is established the first season after chaparral fires. Although herbaceous annual plants are notably uncommon under or near chaparral shrubs, their immediate and abundant appearance after a fire indicates that their seeds are present in the ground. Other plants, such as laurel sumac, recover after a fire by root sprouting. With a natural fuel load, a fire often passes through an area more quickly and at a lower temperature than fires with a high fuel load, allowing the fire to pass without damaging the roots of chaparral plants.

The National Park Service is now operating under a policy of prescribed burning, as described in the Santa Monica Mountains National Recreation Area Fire Management Plan (NPS 1986). Areas with high fuel loads are predetermined and are ignited when weather conditions are optimal for containment within the designated area. The Decker Canyon site is composed of flashy fuels, mostly grasses, that burn quickly. A prescribed burn was conducted on the property in July of 1983. More recently, the Decker Canyon wildfire of October 1985 burned the site and extensive adjacent areas.

ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

The alternatives discussed below visibly affect approximately one-quarter of the 151-acre Decker Canyon parcel. The remainder of the property would be managed as backcountry, the only development being a trail system and possibly some primitive campsites. Based upon available information, all alternatives have been designed to minimize impacts to the natural and cultural resources of the Decker Canyon property. During preliminary and final design of the facilities, additional surveys would be required for specific development sites to ensure that resources have not been overlooked.

Under any alternative construction activities would be limited to the immediate area to minimize impacts; however, any construction site where soil is disturbed will undergo accelerated erosion, at least temporarily, until drainage structures are fully operable and cleared areas are surfaced or landscaped and revegetated. Any construction would be restricted to the minimum area required for construction.

The actions proposed in any of the alternative were developed in accordance with the National Park Service final regulations for implementing Executive Orders 11998 and 19990 (45 FR 35916 as amended August 23, 1982 by 45 FR 36718). These alternatives propose actions that would avoid or mitigate adverse impacts associated with occupation of floodplains and wetlands at Decker Canyon.

ALTERNATIVE I - NO ACTION

DESCRIPTION AND CONCLUSION

Under this alternative, no action would be taken to either develop or dispose of the property. Because portions of the property would continue to be used on an informal basis by the general public, improvements would be made to minimize resource deterioration. These actions would have no adverse environmental consequences.

SOCIOECONOMIC IMPACTS

Minor improvements would be made to accommodate most existing uses at the site, improving the experience for some visitors. The scenic qualities of the site would be modestly improved with defined parking and picnic areas and trash collection. These improvements might encourage additional use of the site, but this would have little, if any, effect on adjacent land owners. Efforts would be made to block off-road vehicle use, which would be an annoyance to those used to using this site for such activities. Because development would be minimal, much of the site would continue to be inaccessible to the disabled with limited mobility.

Formalizing use of the site would require increased trash collection and might require increased patrols, depending on the level of increase in visitor use. Current funding levels for park operations cannot absorb any increase in maintenance or patrol activity; the budget would have to be augmented.

There would be no effect on the regional economy from proposed use of the site. However, the property would remain off of the tax roles. There should be little increase in traffic on the local road system.

IMPACTS ON CULTURAL RESOURCES

Continued unsupervised use of the site could have a long-term negative effect on known cultural resources. Curtailing off-road vehicle use would reduce damage to known archeological sites from these vehicles. Collection of surface artifacts would likely continue without on-site supervision of visitor use.

IMPACTS ON THE PHYSICAL ENVIRONMENT

Soils

Development of restrictive signs and aesthetically compatible structural barriers at the vehicle entry sites would eliminate random vehicle use of the area, thus reducing associated impacts such as formation and continued use of two-track dirt roads and informal parking areas. However, random use by pedestrians and horseback riders would continue. Such use would continue to compact soils and channel water runoff along dirt trails, which would promote surface erosion.

The elimination of vehicles from the sensitive oak woodland, riparian zone, and wetland habitat would allow impacted soils to recover to some degree, but lesser impacts from pedestrians and horses would continue.

Possible later installation of a maximum of five picnic tables in an area presently impacted but away from the sensitive oak woodland, riparian zone, and wetland area would further aid this approximate 2 1/2-acre area to recover.

Air Quality

There would be a slight improvement to the air quality in the immediate Decker Canyon site. The development of restrictive signs and structural barriers at vehicle entry points would eliminate use of the area by off-road vehicles, thus reducing the load of dust (which, under certain atmospheric conditions, could be visible from Decker Road and the Mulholland Scenic Parkway corridor) and other particulate matter introduced into the air within the immediate Decker Canyon area.

Hydrology and Water Quality

No impacts to the hydrology of Decker Canyon would be anticipated under this alternative.

The water quality of the seasonal stream, riparian zone, and wetland area would be expected to improve. The current unregulated vehicle use crushes and destroys vegetation and compacts soils within the riparian zone and wetland area. Runoff from these compacted, barren soil surfaces tends to transport sediment into the stream and degrade water quality. Elimination of vehicles from the site would allow the barren soil surfaces to recover and become revegetated, and, in time, most runoff into the seasonal stream would

be significantly reduced. However, random pedestrian traffic and horseback riding would be expected to continue, with slight impacts to the water quality--principally because of surface erosion.

The seasonal fluctuations of fecal coliform counts, resultant most probably from birds, would continue.

Floodplains and Wetlands

The Decker Canyon site is on an upper tributary of Trancas Creek. Although the floodplains have not been mapped, alternative I would not be expected to have any adverse impacts on the Trancas Creek drainage system or threaten human life or property. Because the drainage area is extremely small, the chances of flash flooding are rare. If the proposed picnic tables and trash receptacles are provided at Decker Canyon, they would be placed away from the wetland to avoid impacts to that area and further reduce the chance of flood damage. (However, if a flood damaged the picnic tables and trash receptacles, they are nonpermanent structures of modest investment and their loss would not be substantial.)

IMPACTS ON THE BIOLOGICAL ENVIRONMENT

Vegetation

Eliminating unregulated vehicle use would allow dirt roads that are not being converted to trails and approximately 2 1/2 acres of oak woodland and riparian zone understory and wetland area to restore itself to some degree. Random pedestrian and horseback use would continue to impact vegetation by

trampling, compacting the soil, and preventing seed germination in the affected areas. However, relative to the impacts generated by vehicles this impact is minor.

Wildlife

There would be no adverse impacts to any wildlife species under this alternative. Eliminating vehicles, four-wheel drives, and motorcycles would allow restoration of the existing dirt roads and approximately 2 1/2 acres of oak woodland, riparian understory, and wetland area, creating additional habitat for a wide variety of rodents, mammals, birds, reptiles, and amphibians. Some impacts from pedestrians and horseback riders would continue.

Special Status Species

Although no state or federally listed threatened or endangered species are known to occur at the Decker Canyon site, suitable habitat does exist for the San Diego Mountain king snake and Least Bell's Vireo, listed as rare and endangered, respectively, by the state of California Department of Fish and Game (1980). The Least Bell's Vireo is also a federally listed endangered species. These two species have not been identified as residing in, nesting, or using any portion of the study site, and their presence has not been documented through any other means; therefore, no impacts on special status species would be expected for this alternative. Should any special status plant or animal species be discovered before, during, or after site development, appropriate agency consultation would be initiated.

Fire Management

The national recreation area policy of fire management would continue under this alternative--total suppression of wildfires and controlled burns under optimal weather and other conditions.

ALTERNATIVE II - EXCHANGE

DESCRIPTION AND CONCLUSION

Portions of the Decker Canyon property would be disposed of through exchange to acquire other high priority property within the national recreation area in this alternative. Impacts from development of the exchanged properties cannot be fully determined until specific development plans have been prepared by the new owners; however, restrictions on the type of development permitted on those lands not retained by the National Park Service would ensure protection of the Mulholland Scenic Parkway corridor.

Although portions of the property would be in private ownership, the primary resource areas would remain in National Park Service ownership and be available for visitor use as described in alternative I; the impacts from visitor use and development would be minimal, as described in alternative I.

Although there were numerous possible exchange scenarios, only one other than the one described below was seriously considered--private development of recreation facilities essentially the same as those proposed in alternative IV. (See alternative IV for a discussion of the environmental consequences of that action.)

The following discussion describes the potential impacts of the exchange scenario in which five parcels for private residential development would be exchanged for other high priority lands within the national recreation area. Limited private development of portions of the Decker Canyon property in this exchange scenario would not be anticipated to have significant environmental

consequences. Proposed density would be well below that permitted by current zoning, and constraints imposed through deed restrictions would further limit the extent of development. Further constraints would be imposed by the county and coastal commission, which have approval authority. The primary effect could be the visual intrusion of access roads on currently undeveloped recreation lands.

SOCIOECONOMIC IMPACTS

The primary resource area would be available for visitor use, although portions of the property would be in private ownership. The effects on the visitor experience from minor improvements would be essentially the same as in alternative I. Scenic quality of the property could be altered with the construction of access roads to the private inholdings. With careful planning and review, these intrusions should be minimal. The proximity of visitor uses and private residential use could cause conflicts and trespass problems.

A relatively small percentage of the property would be returned to the tax roles, providing a minor benefit to the local economy. There would be little increase in traffic on the local road system.

In addition to the effects on park management and operations described under alternative I, the park staff would have the added responsibility of reviewing development proposals, monitoring compliance with deed restrictions, and resolving conflicts. If landowners are uncooperative, this can be a time-consuming task.

If a private, barrier-free camp similar to that described in alternative IV was developed as an exchange option, a slightly greater benefit to the local economy would occur as a result of tax revenue and employment.

IMPACTS ON CULTURAL RESOURCES

The five possible exchange parcels have been surveyed and no significant resources were located. Other effects on known cultural resources would be the same as in alternative I. The presence of residents on the property may act as a deterrent to disturbance of archeological sites and collection of surface artifacts. However, because the development parcels would be out of view of the more frequently visited portions of the property, this deterrent effect would be minor.

IMPACTS ON THE PHYSICAL ENVIRONMENT

The specific impacts for this alternative are impossible to quantify at this time. The exchange and subsequent development of the five parcels would probably occur incrementally over time, and landowners might have different uses for the five parcels. However, federal interests would be perpetuated through deed restrictions, and land uses inconsistent with Santa Monica Mountains National Recreation Area policy would be avoided by determining the location and number of structures.

Soils

Construction of access roads and five residences would cover an undetermined acreage and either partially or wholly eliminate direct inflow of water to soil, increasing the possibility of erosion because of surface runoff. Site preparation and grading for buildings and roads would result in removal or addition of soil, altering the local soil structure. Covered and compacted soils have: less moisture, reduced oxygen content, additional petroleum pollutants because of leaching and runoff on paved surfaces, and altered physical, chemical, and biological composition. Runoff not collected and diverted to natural drainages would flow out to adjacent areas, increasing local soil moisture. Increased runoff in these areas might result in localized increases in erosion and changes in soil nutrient transport. Altered vegetation composition could also create slight changes in soil chemistry. These effects would likely be most severe along access roads on steep hillsides.

The National Park Service would monitor resources to detect levels of degradation and take appropriate actions (within legal limitations) to correct problems.

Air Quality

Slight air quality degradation at the immediate area of Decker Canyon would be eliminated under this alternative because of the elimination of off-road vehicle use. Vehicles traveling on dirt roads generate dust and particulate matter, which could be visible from Decker Road and the Mulholland Scenic Parkway corridor in times of certain atmospheric conditions and heavy vehicle

use.

Increased use of Decker Road and Mulholland Highway by persons visiting the site would result in some localized increase in vehicle emissions. However, it would not be expected that this increase would be significant or that these emissions would significantly affect the ambient air quality of the site or the region.

Short-term effects would consist of dust and suspended particulates from construction activities and emissions from construction equipment. Proposals under this alternative would not be expected to have any long-term adverse effects on air quality at Decker Canyon.

Hydrology and Water Quality

The hydrology of Decker Canyon would not be affected by this alternative. Short-term water quality degradation of the seasonal stream would occur during facility construction because of loading of suspended and settleable solids. However, considering the amount of existing runoff from the bare soil and that vegetation would be reintroduced once construction is completed, this impact would not be significant. There would be no long-term effects to water quality.

Potable water is available from a pipeline buried under Mulholland Highway. All water and sewage systems would be in compliance with the Federal Water Pollution Act (commonly referred to as the Clean Water Act), 33 USC 1251 et seq., and the Safe Drinking Water Act, 42 USC 300f et seq.

In the ephemeral stream, the seasonal fluctuations of fecal coliform counts, resultant most probably from birds, would continue.

Floodplains and Wetlands

The Decker Canyon site is on an upper tributary of Trancas Creek. Although floodplains have not been mapped, the private development parcels proposed are not in bottomlands and should not be affected by flooding. There should be no impacts to the Trancas Creek drainage or threats to human life or property as a result of development proposed in this alternative. The riparian zone would remain under National Park Service management. (See also alternative I for description of impacts of minor improvements made to accommodate existing uses.)

IMPACTS ON BIOLOGICAL ENVIRONMENT

Vegetation

Construction of five residences, utility lines, and access roads would destroy an undetermined acreage of chaparral vegetation and a small acreage of grassland. Homeowners would undoubtedly introduce nonnative species into their landscape, altering species composition. Species that are adapted to invade and thrive in disturbed areas might become more common, particularly along access road shoulders and utility trenches. Even if these areas are carefully reseeded, the species composition may not be identical to adjacent areas. Although these impacts would generally be localized, certain species might spread, altering the composition of the native vegetation.

Other impacts on vegetation would be as for alternative I.

Wildlife

Impacts on wildlife would be minor because of the small acreage to be developed. A minimal amount of habitat and food sources would be permanently lost. Additionally, it is conceivable that homeowners could develop their parcels in a manner that would reduce or exclude some species of wildlife. Fencing and the maintenance of firebreaks around residences could reduce the amount of suitable wildlife habitat. During construction activities, small, relatively slow-moving animals, such as rodents and some reptiles, might be killed or forced to relocate to unaffected areas. The more critical habitat areas, particularly those containing water sources, would remain under National Park Service management.

Special Status Species

Same as for alternative I.

Fire Management

Same as for alternative I.

ALTERNATIVE III - DAY USE FACILITY

DESCRIPTION AND CONCLUSION

The Decker Canyon property would be retained in National Park Service ownership and a portion would be developed as a day use gateway/environmental education center that would be accessible to the disabled and elderly. An information/interpretive center, picnic facilities, and interpretive trails would provide opportunities for visitors to enjoy the scenic qualities of the site and learn about the natural and cultural resources of the Decker Canyon site and adjacent recreational lands. Approximately 2.64 acres of the 151-acre parcel would be directly affected by the development and subsequent use of the site. The long-term effect would be an enhancement of the natural and cultural values of the site under active National Park Service management.

SOCIOECONOMIC IMPACTS

Development of a new activity center in the western portion of the mountains would likely increase visitation to other public lands in the area including Arroyo Sequit Ranch, the Backbone Trail, and Zuma and Trancas canyons. Visitor use would be expected to increase significantly as interpretive programs and recreational opportunities became known to the general public. The developed area would be totally accessible to the disabled and elderly. This expected increase in visitor use of the site might affect adjacent land owners to some extent. Site visitation is difficult to predict; to a large extent, visitation would be determined by the frequency and popularity of

interpretive programs and how well they were publicized. Traffic on roads leading to the site could increase, compounding problems along the narrow, winding roads. To partially mitigate these effects, Decker Road would be relocated eliminating the hazardous intersection at Mulholland Highway. Also, visitors would be encouraged to reach the site from the Ventura Freeway by way of Kanan Dume Road to Encinal Canyon Road to Lechusa Road and then north on Decker Road to the site rather than by Mulholland Highway--reducing congestion on this narrow road. If the site became a popular destination, parking and congestion could become problems, especially if visitors park on the narrow mountain road shoulders. Such conditions would likely occur only on occasional weekends. The National Park Service might be obligated to increase parking if this situation became a problem. An area for the future development of additional (overflow) parking is identified on the site plan.

The earth-sheltered design concept would minimize the visual intrusion of the development, particularly when seen from Mulholland Highway, and the biological impact of construction. Although there would be disturbance from initial construction, the completed facilities would blend into the landscape, retaining the rural character of the site. Proposed design features (earth-sheltering and screening from Mulholland) would provide a model for development of other portions of the Mulholland scenic corridor. The earth-sheltered design would also offer a degree of protection from wildfires, protecting the investment of the concessioner and the National Park Service and enhancing visitor safety.

There would be minimal effect on the local economy from the proposed use of the site. However, the property would remain off of the tax roles.

Park management and operations would be affected, with the need for facility maintenance and more frequent patrols and trash collection. Although most program activities would probably be conducted by docent or other groups, park staff would be involved in developing and coordinating the programs and training volunteer personnel. There would be some commitment of staff time for ranger-led programs at the site. These activities would require an increase in funding and additional personnel.

IMPACTS ON THE CULTURAL RESOURCES

Increased use of the site would have little direct effect on known cultural resources. Eliminating off-road vehicle use would reduce damage to known archeological sites. Construction of facilities, trails, boardwalks, parking areas, and picnic facilities would have localized impacts that might disturb unknown surface and subsurface artifacts. No development would occur in areas with known concentrations of artifacts. Staff archeologists would monitor all development, and if cultural resources are encountered work will be halted and consultations would be initiated to determine mitigating measures. There would likely be less collection of surface artifacts by visitors because of the presence of interpretive center personnel.

IMPACTS ON THE PHYSICAL ENVIRONMENT

Soils

About 2 1/2 acres of soil would be impacted by developing the parking areas, roads, the interpretive activity center, and trails (see table 3).

Development would cover approximately 1 1/2 acres with asphalt, concrete, and other impermeable materials. The soil would be graded, leveled, and compacted. Using soil stabilizers rather than asphalt in the less heavily used areas would mitigate some impacts. The earth-sheltered activity center would be covered with 1 to 3 feet of stockpiled topsoil and vegetated with grass species native to the immediate area, thus replacing about 1/10 acre of soil and vegetated surface that would otherwise be unavailable. There would be no expected impact to the soils, other than initial construction because of the wastewater treatment system; however, the chemical composition of the soil near the area of the disposal system would be altered. Use of the more sensitive oak woodland and riparian zone (currently impacted by parking and off-road vehicle use) would be discontinued and soils would return to a more natural condition. The new parking area would be mostly constructed on the former alignment of Decker Road and would have little additional impact. The overflow parking area, if needed, would be reinforced with hollow pavers that would permit the natural grasses to continue growing.

Site preparation and grading for buildings, the wastewater treatment system, road relocation, parking areas, and trails would result in removal and addition of soil, which would alter the local soil structure.

Roads, buildings, and other impermeable surfaces would partially or wholly eliminate direct inflow of water to the soil. Compaction of soils in the development areas would occur. Covered and compacted soils have less moisture, reduced oxygen content, additional petroleum pollutants because of leaching and runoff on paved surfaces, and altered physical, chemical, and biological composition. The runoff not collected and diverted to natural drainages would flow into adjacent areas, increasing local soil moisture.

Table 3: Summary of Development Impacts - Alternative III

	<u>Feet</u>	<u>Acres</u>
Length of Decker Road to be removed - 22' wide	1250	0.63
Dirt roads on site - approx. 3/4 mile		1.07
Length of new Decker Road - 24' wide	1100	0.61
Parking Areas		
Activity Center (paved)		0.13
Overflow (unpaved)		0.25

Total acres roads and parking		0.99
Structures		
Activity Center, walks, patios, amphitheater		0.37
Misc. - stable, septic, etc.		0.05

Total acres structures		0.42
Wastewater disposal area		0.10
Primitive Campsites		
Trails*	<u>Miles</u>	<u>Feet</u> <u>Acres</u>
Walking trails (hard-surfaced)	0.92	4,864.32 0.67
Boardwalks	0.08	442.80 0.06
Equestrian trail (unpaved)	0.55	2,926.80 0.40

Total trails	1.55	8,233.92 1.13
TOTAL ACRES OF DEVELOPMENT		2.64
Earth-sheltering (partial restoration of habitat)		0.11
SUMMARY -----		
Roads and parking		0.99
Structure		0.42
Wastewater disposal		0.10
Trails		1.13

Total Development		2.64

* (Does not include link to Backbone Trail beyond the immediate developed area.)

Increased runoff in these areas might result in localized increases in erosion and changes in soil nutrient transport. Altered vegetation composition could also create slight changes in soil chemistry.

Topsoil removed from construction sites would be stockpiled to conserve organic matter and for use as needed in rehabilitation projects and in recontouring affected areas. This would minimize the overall loss of topsoil caused by development.

Use of the 1.55 miles of trails would continue impacts such as compaction and trampling of vegetation, surface erosion, and channelization because of runoff. Slightly more than 1/2 mile of trail would be used for equestrian purposes, linking to the Backbone Trail. A parallel but separated trail would allow equestrians and people in wheelchairs to use this trail segment. Relative to vehicle use, these impacts are not severe, and routine trail maintenance would further reduce these impacts.

Approximately 1,250 feet of Decker Road would be obliterated and restored, although portions of that road alignment would be used for trails, service access and parking. Approximately 1,100 feet of the relocated Decker Road would be constructed (possibly to a higher standard).

The proposed 442-foot-long, 6-foot-wide boardwalk through the oak woodland and riparian zone would be developed on soils that have already been impacted by random vehicle and pedestrian use. These soils are compacted and barren and have been subjected to erosion and channelization from runoff. The proposed boardwalk would focus visitor use to a designated area and eliminate most further impacts, thus allowing the oak woodland and riparian area to recover. The soil under the boardwalk and in the immediate area

would be disturbed during construction activities. Some soil would be removed for the installation of post foundations, if required.

Areas in and around the 10 to 15 picnic tables would be impacted by initial installation and pedestrian traffic. This would result in vegetation trampling and soil compaction in the immediate area and to a lesser extent in the area immediately surrounding the facilities; however, this involves minimal acreage. To mitigate or reduce effects of visitor use on and around such areas, National Park Service staff would monitor resources to detect levels of degradation and modify use or development, rotate use areas, put up restrictive signing, or install physical barriers.

Air Quality

The impacts to air quality would be the same as for alternative II. The expected increase in vehicular traffic, greater in this alternative than in the previous alternative, would result in some localized increase in vehicular emissions. However, it is not expected that these emissions would significantly affect the ambient air quality of the site.

Hydrology and Water Quality

There would be no adverse effect on the hydrology of Decker Canyon anticipated in this alternative. In the long term, the water quality of the Decker Canyon property would not be affected by this alternative, with the extremely localized exception of surface water near the paved parking area. Approximately 1 1/2 acres would be capped by asphalt, concrete, and other

impermeable materials, which would slightly increase surface runoff into the seasonal stream. Water percolation directly under the parking areas, structure, and trails would be reduced. For trail surfaces, the use of soil stabilizers rather than asphalt, wherever possible, would result in some soil permeability. Slight quantities of oil from parked vehicles and petroleum by-products from the asphalt might be distributed by leaching and runoff in the immediate area of the parking areas. During heavy rains, slight quantities of these pollutants might also be transported into the seasonal stream. Earth-sheltered design would permit infiltration of moisture and subsurface diversion to surrounding soils. Existing areas of bare soil, resulting from unregulated vehicle and pedestrian use, would be revegetated, thus reducing erosion and sedimentation of the seasonal stream. Surfaced trails might result in some localized erosion because of channelization. Stockpiling dirt and recontouring and revegetating associated affected areas after construction would reduce sedimentation and runoff.

Short-term water quality degradation of the seasonal stream would occur during facility construction because of loading of suspended and settleable solids. However, considering the amount of existing runoff from the bare soil and that the vegetation would be reintroduced once construction is completed, this impact would not be significant.

An on-site wastewater treatment system using a septic tank and absorption trench would be developed under this alternative. There would be a localized increase in soil moisture and nutrient content in the area of the trench. This system would comply with all state and federal regulations regarding design and public safety and would meet all U.S. Public Health Service standards. Wastes from the collection and treatment system associated with

this development would not be allowed to reduce the quality of surface or groundwater. Facility design would include appropriate water conservation techniques and appliances to minimize water consumption and use.

All water and sewage systems would be in compliance with the Federal Water Pollution Act (commonly referred to as the Clean Water Act), 33 USC 1251 et seq., and the Safe Drinking Water Act, 42 USC 300f et seq.

In the ephemeral stream, the seasonal fluctuations of fecal coliform counts, resultant most probably from birds, would continue.

Floodplains and Wetlands

Although the floodplains have not been mapped, the developments under this alternative would not be expected to have any adverse impacts to the Trancas Creek drainage or threaten human life or property. Because the drainage area above the development site is small, the chances of flooding are highly unlikely. In addition, all facilities except the boardwalk and footbridges would be away from the stream and major drainage area. The boardwalk represents a nonpermanent structure of modest investment, and its loss in the event of a flood would not be substantial. No compliance with floodplain or wetland regulations is required because trails are a permitted use in those areas.

Development in the oak woodland and riparian zone would be restricted to construction of the boardwalk and trails. Every effort would be made to minimize the impacts of construction; sensitive design and construction activities would facilitate this goal.

The picnic tables along the trail would introduce no additional impacts.

The actions proposed under this alternative were developed in accordance with National Park Service final regulations for implementing Executive Orders 11998 and 11990 (45 FR 35916 as amended August 23, 1982, by 45 FR 36718). This alternative proposes actions that avoid or mitigate adverse impacts associated with occupation of floodplains and wetlands at Decker Canyon.

IMPACTS ON BIOLOGICAL ENVIRONMENT

Vegetation

Approximately 2 2/3 acres of grassland and chaparral vegetation would be destroyed to develop the proposed facilities. The hard-surfaced trails, approximately 1 1/2 miles in length, would in part be developed on existing informal dirt roads, which are currently devoid of vegetation. The 442-foot boardwalk through the oak woodland and riparian zone and wetland area would be developed primarily on areas where understory and other vegetation is currently severely impacted by unregulated vehicle and pedestrian use. The boardwalk would focus visitor use to a restricted area and allow the oak woodland, riparian zone understory, and wetland area, to restore itself. No trees would be removed to provide this facility.

Existing dirt roads that are not converted to trails or parking areas would be obliterated through scarification or disking and allowed to return to a natural condition. These roads traverse chaparral and grassland habitats. The road surfaces are compacted and barren of vegetation. As long as the roads are used as trails, the soil would continue to be compacted and

vegetation trampled.

Rain that falls on impervious structures would not be absorbed by soils, and that which is not collected and diverted to natural drainages would flow into adjacent areas, increasing soil moisture.

Areas near trails, picnic tables, and the interpretive activity center might be impacted by visitors. This would result in trampled vegetation and compacted soil, which reduces water percolation through and permeability of soils and reduces subsurface water available for plants. This might alter the relative abundance of some plant species adjacent to the affected areas, and species that are adapted to invade and thrive in disturbed areas might become more common. Seed germination of some plant species might be reduced by pedestrian traffic and the resulting compacted soils. Further, trampling of vegetation and soil compaction might eliminate vegetation entirely or result in a shift of species composition of the affected areas. Resource monitoring, rotation of use, barriers, sensitive design for easy and direct pedestrian circulation, and restrictive signing would help mitigate these impacts.

Excavation of utility trenches and other construction activities would destroy vegetation. These areas would be revegetated following construction. In areas immediately around construction sites vegetation would be crushed but would recover following construction activities.

Following construction topsoil that had been removed and stockpiled would be used to replace and reseed with native plant species. Whenever topsoil is removed, the top few inches of soil that contain important organic material becomes mixed with the lower soil layers; this might affect growth of

some plant species. During the recovery phase, the reseeded areas might not be identical to adjacent areas relative to species composition.

The earth-sheltered activity center would be covered by 1 to 3 feet of stockpiled topsoil and vegetated with grass and forb species native to the immediate area, partially restoring some of the grassland that would be lost during construction.

Increased nutrients in soils in the area of the absorption trench have different effects on different species. Lower levels of nutrients generally promote plant growth. Higher levels of nutrients generally retard growth or largely prevent it, as the tolerance of each species to these nutrients is exceeded.

Wildlife

Approximately 2 2/3 acres of grassland and chaparral wildlife habitat would be destroyed to develop the facilities in this alternative. Restored wildlife habitat--whether through active restoration activities (such as the top of the earth-sheltered activity center) or natural reclamation (such as the 2 1/2-acre area of the oak woodland and riparian zone understory and wetland area)--would qualitatively enhance existing wildlife habitat at Decker Canyon.

During construction, small, relatively slow-moving animals, such as rodents and some reptiles, might be killed or forced to relocate to unaffected areas.

Impacts to predators and omnivores would be insignificant, consisting primarily of minor losses of food (small prey) and cover. During and after

construction the affected area would be unavailable for ranging predators and omnivores to hunt and forage. Predators and omnivores nest and den in rock crevices, shallow burrows in brushy areas, small caves, and tree hollows. None of these areas would be affected by this alternative.

There would be a temporary impact to amphibians, particularly those in the seasonal stream, wetland area, and in the drainages near the construction. Construction activities would temporarily increase the suspended and settleable solids washing into the seasonal stream, which would reduce the quality of habitat for amphibians for as long as construction occurs. Careful construction techniques and resource monitoring would help reduce this impact. Once construction activities are completed, the stream and associated drainages would cleanse themselves during the next rainy season.

The earth-sheltered activity center would be reseeded with native grass species. This rooftop habitat would provide an area for small animals, especially rodents, to forage, nest, and den. Natural restoration of the oak woodland and riparian zone understory and wetland area would provide additional habitat for rodents, large mammals, birds, and other animal species.

Special Status Species

Same as for alternative I.

Fire Management

The impacts for fire management would be the same as for alternative I. The structure, picnic tables, boardwalks, etc. would be protected during prescribed burns.

ALTERNATIVE IV - BARRIER-FREE ENVIRONMENTAL EDUCATION CAMP (Proposal)

DESCRIPTION AND CONCLUSION

The proposed action is the development of a day use interpretive activity center and a barrier-free environmental education camp that would serve day use and overnight visitors. The camp proposal would differ from other facilities in that it would be targeted towards the full population of disabled rather than a specific age group or disability. All of the Decker Canyon property would remain in National Park Service ownership and be developed for visitor use and interpretation. Approximately 8 acres of the 151-acre parcel would be affected by the development of buildings, parking areas, wastewater treatment facilities, and trails. The long-term effect would be an enhancement of the natural and cultural values of the site.

SOCIOECONOMIC IMPACTS

The proposed new activity center and barrier-free overnight facility would provide an opportunity for families of disabled individuals and individuals of all disabilities to experience a representative portion of the Santa Monica Mountains environment without the barriers that are imposed by many of the existing public and private recreational facilities within the national recreation area. Day use is an unknown quantity but could be expected to increase as the facility and programs became known to the general public. To a large extent, visitation would be determined by the frequency and popularity of interpretive programs and how well they were publicized. The

overnight camp would be expected to average 75 visitors (plus staff) each day. An equestrian facility would provide opportunities to expand the experience beyond the immediate area of the camp. This development in the western portion of the mountains would likely increase visitation to other public lands in the area including Arroyo Sequit Ranch, the Backbone Trail, and Zuma and Trancas canyons.

The increase in visitation to the site would affect adjacent land owners to some extent. Traffic on roads leading to the site could increase, compounding problems along the narrow, winding roads. To partially mitigate this effect, Decker Road would be relocated, eliminating the hazardous intersection at Mulholland Highway. Also, visitors would be encouraged to reach the site from the Ventura Freeway by way of Kanan Dume Road to Encinal Canyon Road to Lechusa Road and then north on Decker Road to the site rather than by Mulholland Highway--reducing congestion on this narrow road.

If the site became a popular destination for day visitors, parking could add to the congestion on the narrow mountain roads, especially if visitors park on the narrow road shoulders. Such conditions would likely occur only on occasional weekends. The National Park Service might be obligated to increase parking if this situation became a problem. An overflow parking area is identified on the site plan. Parking for overnight visitors would not be a problem because adequate parking would be provided. An area for the future development of overflow parking is identified on the site plan.

The earth-sheltered design concept would minimize the visual intrusion of the development, particularly when seen from Mulholland Highway, and the biological impact of construction. Although the initial disturbance would be

extensive, the completed facilities would blend into the landscape, retaining the rural character of the site. Proposed design features (earth-sheltering and screening from Mulholland) would provide a model for development of other portions of the Mulholland scenic corridor. The earth-sheltered design would also offer a degree of protection from wildfires, protecting the investment of the concessioner and the National Park Service and enhancing visitor safety.

The camp would generate additional traffic on local roads. Some visitors will travel in specially equipped vans that may be slow moving. Most staff members would commute to the camp on a daily basis. There would be periodic delivery of supplies, generally during weekdays when there would be little conflict with existing traffic. Overnight use is intended to be for extended visits to several days up to two weeks; it would be rare that camp users would be arriving or departing on the same day. An exception would be when a group reserves the camp.

The equestrian facility might attract additional insects, which might annoy some park visitors.

The local economy would receive marginal benefits because of construction activities and employment of personnel to staff the camp. It is anticipated that the camp would be run by a nonprofit organization, relying partially on donations and grants, thus minimizing local revenues. The property would remain off the tax roles.

The National Park Service and a concessioner, who would be selected by the National Park Service in a competitive concession contract bid, would cooperatively manage the interpretive center and the camp. Specific details

would be negotiated in the concession contract. The concessioner would have primary responsibility for development.

IMPACTS ON THE CULTURAL RESOURCES

Impacts on cultural resources would be the same as for alternative III except that the presence of a full-time staff should minimize opportunities for illegal collection of artifacts and other disturbances to cultural resources. Interpretive themes and exhibits and cooperation with the local Chumash Indians would be given even greater attention under this alternative.

IMPACTS ON THE PHYSICAL ENVIRONMENT

Soils

The impacts on soils under alternative IV (see table 4) would be essentially the same as for alternative III; however, because development is more extensive in this alternative, the following modifications are applicable. Development would impact approximately 8 acres and approximately 6 acres would be covered with asphalt, concrete or other impermeable materials. However, earth-sheltering of this larger development would restore 1/5 acre to soil and vegetation. Approximately 1 3/4 acres would be used for parking areas, 4 1/2 acres for structures, and 1.91 miles for trails; about 4/10 mile of these trails would be used for equestrian purposes. The almost 1/5 acre disposal area for wastewater treatment would alter the chemical composition of a greater quantity of soil in the localized areas of the seepage pits and absorption trench than in alternative III.

Table 4: Summary of Development Impacts - Alternative IV

	<u>Feet</u>	<u>Acres</u>
Length of Decker Road to be removed - 22' wide	1250	0.63
Dirt roads on site - approx. 3/4 mile		1.07
Length of new Decker Road - 24' wide	1100	0.61
Parking Areas		
Activity Center (paved)		0.15
Equestrian Center (soil stabilized)		0.38
Camp (paved)		0.35
Overflow (unpaved)		0.25

Total acres roads and parking		1.74
Structures		
Activity Center, walks, patios, amphitheater		0.53
Camp - lodges, dining hall, walks, pool, etc.		3.84
Misc. - stable, septic, etc.		0.09

Total acres structures		4.46
Wastewater disposal area		0.19
Primitive Campsites		0.14
Trails*	<u>Miles</u>	<u>Feet</u> <u>Acres</u>
Walking trails (hard surfaced)	1.40	7,376.40 1.02
Boardwalks	0.08	442.80 0.06
Equestrian trail (unpaved)	0.43	2,278.80 0.31

Total trails	1.91	10,098.00 1.39
TOTAL ACRES OF DEVELOPMENT		7.91
Earth-sheltering (partial restoration of habitat)		0.19
SUMMARY -----		
Roads and parking		1.74
Structure		4.46
Wastewater disposal		0.19
Primitive campsites		0.14
Trails		1.39

Total Development		7.91 acres

*(Does not include link to Backbone Trail beyond the immediate developed area of the campsites)		

Air Quality

The impacts for air quality would be the same as for alternative III. Even with the potential increase in traffic--more than in alternative III--it is not expected that vehicular emissions would significantly affect the ambient air quality of the site.

Hydrology and Water Quality

The impact on hydrology and water quality would be same as for alternative III with the following modifications.

HORSE WASTES

Because of the more extensive development in this alternative, 6 acres would be capped with impermeable materials, which could increase the amount of surface runoff into the seasonal stream. There would be localized increase in soil moisture and nutrient content because of the use of seepage pits and an absorption trench in this alternative. Also, the potential for slight, short-term water quality degradation during facility construction would be greater in this alternative because more construction would be done. There is slight potential for contamination of the seasonal stream from horse wastes. Regular monitoring and maintenance activities would help reduce this impact. There is potential for surface water quality degradation from the equestrian facility; active maintenance would help reduce this potential.

NEED ACTIVE REGULATION

15 MINUTE - SITES

FALL IN MGT

DESIGN

Floodplains and Wetlands

The impacts would be the same as for alternative III.

STORMWATER RUNOFF
FROM PAVED PARKING
AREA

IMPACTS ON THE BIOLOGICAL ENVIRONMENT

Vegetation

Impacts on vegetation in this alternative would be the same as in alternative III with the following modifications. Approximately 5 1/4 more acres of grassland and chaparral vegetation would be disturbed to develop the proposed facilities, and the earth-sheltered buildings would provide almost 1/5 acre of restored grassland, which would partially restore some of the grassland that would be lost during construction.

Wildlife

The impacts to wildlife in this alternative would be the same as in alternative III with the following modifications: approximately 5 1/4 more acres of disturbed grassland and chaparral wildlife habitat would be disturbed for development, and more rooftop area (1/5 acre) would be available as restored wildlife habitat.

Special Status Species

Same as for alternative I.

Fire Management

Same as for alternative I. The structures, picnic tables, boardwalks, etc., would be protected during prescribed burns.

SUMMARY COMPARISON OF ALTERNATIVES

Currently 1.7 acres of roads exist on the property. In alternatives I and II there would be a net decrease in land adversely impacted because of the elimination of off-road vehicle use. Under alternative III there would be a net increase of slightly less than 1 acre, and under alternative IV there would be a net increase of 6 1/5 acres. The total development under alternative III is 2.64 acres and 7.91 acres under alternative IV. These are 0.018 percent and 0.05 percent, respectively, of the 151-acre property.

Visually, the entire development would occupy, at most, 34 to 35 acres in the bowl area along Decker Road. However, because of earth-sheltering and the careful placement of facilities within the terrain, little of the development would be visible from Decker Road and virtually none would be visible from Mulholland Highway.

Table 5: Comparison of Acreages Affected By Development

	<u>ALT I</u>	<u>ALT II</u>	<u>ALT III</u>	<u>ALT IV</u>
Roads	0.63	1.24	0.61	0.61
Parking	0.06	0.06	0.38	1.13
Structures		0.23	0.42	4.46
Wastewater disposal		0.08	0.10	0.19
Primitive campsites				0.14
Trails			1.13	1.39
<hr/>				
Total Development	0.69	1.61	2.64	7.91
Net Change	-1.01	-0.09	0.94	6.21

LIST OF PREPARERS

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Jerry Wheeler, Project Supervisor

Western Regional Office (WRO)

Bart Hoppe, Chief Concessions, Western Regional Office
Roger Kelly, Archeologist,

CONSULTATION AND COORDINATION IN
THE DEVELOPMENT OF THE PROPOSAL AND IN THE
PREPARATION OF THE ENVIRONMENTAL IMPACT STATEMENT

SCOPING

On September 3, 1985, a news release was issued to announce the intent of the national recreation area to prepare a DCP/EIS for the Decker Canyon property and to request comments on the proposed DCP/EIS. The news release was sent to the media; docent groups within the Santa Monica Mountains; local homeowners groups; libraries; federal, state, and local agencies; and other organizations.

Also in September 1985 a Federal Register notice announced the National Park Service's intent to prepare a DCP/EIS and to conduct scoping or issue identification with interested agencies and individuals. Groups, organizations, and agencies that were contacted or who responded to the news release and Federal Register notice are listed in this section under "Distribution of the DEIS for Public/Agency Review".

FORMULATING THE ALTERNATIVES

The National Park Service was approached in 1982 by a private, nonprofit organization searching for a site to develop a barrier-free camp, and the Decker Canyon site was discussed. Subsequent search for other locations proved to be unsuccessful. The proposal was presented to the Santa Monica Mountains National Recreation Area Advisory Commission, which supported further investigation of the project. Although the proposal was for use of a

part of the Decker Canyon property, the National Park Service contacted other agencies and private organizations and conducted an analysis of lands within the national recreation area boundaries to determine if there might be a more appropriate location. There were several locations with potential for development of a barrier-free camp, but all properties, including Decker Canyon, had some constraints. In the final analysis, it was determined that the Decker Canyon site had several amenities that outweighed the constraints. Because the property was not covered in the Final General Management Plan (NPS 1982a) , alternatives for use of the property and an environmental impact statement are required.

National recreation area staff conducted a resource evaluation of the site and learned that it contains a number of resources representative of the diversity of the Santa Monica Mountains. The site is more complex than it might appear to the casual observer. Furthermore, the diverse features are in relatively close proximity to one another, providing an ideal interpretive site. These features also influenced the formulation of the alternatives.

Although the parcel was originally acquired for exchange purposes, the natural features and the constraints of development in the Mulholland Scenic Parkway corridor significantly limit the value of the property in an exchange. Exchange of the entire parcel, without severe constraints on development, was not considered a viable alternative.

The formulation of alternatives then focused on appropriate levels of use if the property were wholly or partially retained in National Park Service ownership. Considerations ran from very minimal improvements (perpetuating compatible existing uses of the site) to development of a barrier-free

camping and environmental education facility. Several configurations for the camp facility were explored. The presence of fairly sensitive habitats and archeological resources place constraints on the location of facilities. Decker Road, which bisects the relatively flat area of the site, was at first considered a major constraint; however, relocating the road eliminated a number of constraints, and much of the development could occur on the road scar. Of primary consideration was eliminating the hazardous Decker Road/Mulholland Highway intersection.

ALTERNATIVES CONSIDERED BUT REJECTED

The only alternative fully rejected was the exchange of the entire 151-acre tract. Several development concepts were explored but rejected because of environmental and cultural resource constraints. Alternative locations for the proposed camp were considered but not fully developed because of numerous constraints, such as conflict with existing or approved proposed uses, unsuitable terrain, and uncertainty of timely acquisition.

CONSULTATION AND COORDINATION IN THE PREPARATION OF THE DEIS

Informal meetings were held to solicit input, explain progress, review alternative concepts, and identify other influences that would affect planning for the Decker Canyon area. Parties involved were Los Angeles County Commission on Disabilities; Jay Natelson, The Natelson Co., Inc. (economic feasibility); Darrell McDaniel Independent Living Center, Inc.; Total Access Camping, Inc.; and the Santa Monica Mountains National Recreation Area Advisory Commission.

Visits were made to camps within the Santa Monica Mountains and surrounding area, including the Bloomfield Foundation for the Junior Blind camp, John Meir Crippled Childrens' Camp, and Ahead with Horses. These were the closest in size to the proposed camp.

Visits were also made to Anza Borrego State Park visitor center and Antelope Valley State Poppy Reserve visitor center to consult on earth-sheltered design. Richard Schoen, professor at UCLA graduate school of Architecture and chairman of Architects for Energy Committee, Southern California Chapter, American Institute of Architects, was also consulted on earth-sheltered design.

The planning team met with the Santa Monica Mountains National Recreation Area staff at critical points in the planning process to solicit technical expertise and review ideas and alternatives. The park staff has also conducted continuing consultations with native Americans.

Archeological resources were assessed by Dr. Chester King and by Charlie Cooke, hereditary leader of the southern Chumash Indians. A limited investigation was conducted by Dr. Mark Raab in cooperation with National Park Service staff. Archeological soil disturbance was monitored by Posh Moyle, cultural resource coordinator for the United Chumash. Native American Indian consultation was coordinated with Charlie Cooke and Kote Lotah. Consultation with native American Indians does not imply their approval of the project.

DISTRIBUTION OF THE DEIS FOR PUBLIC/AGENCY REVIEW

Copies of the draft environmental impact statement will be sent to the following organizations for review:

Federal Government

Advisory Council on Historic Preservation

Department of the Army
Corps of Engineers

Department of the Interior
Bureau of Land Management
Geological Survey
U.S. Fish and Wildlife Service

Department of Transportation

Environmental Protection Agency

State, Regional, County, and Municipal Agencies

California Clearing House	City of Santa Monica
California State Historic Preservation Office	City of Thousand Oaks
California Coastal Zone Conservation Commission	County of Los Angeles
	County of Ventura
City Of Beverly Hills	Los Angeles County Sanitation Districts
City of Los Angeles	

Informational copies will also be sent to the following organizations:

Cal Trans District 07	Los Angeles County Fire Department
California Department of Fish and Game	Los Angeles County Sanitation District
California Department of Forestry	Malibu Sheriff's Station
California Department of Parks and Recreation	Planning Department, City of Thousand Oaks
California Department of Water Resources, Southern District	Santa Monica Mountains Conservancy
California Highway Patrol	South Coast Air Quality Management District, Evaluation and Planning Division

Conejo Recreation and Park District

South Coast Area Transit

Las Virgenes Municipal Water District

Southern California Association of
Government

Los Angeles County Department of Parks and
Recreation

State Coastal Conservancy

Ventura County Air Pollution Control
District

Los Angeles County Department of Public Works,
Environmental Studies Section

Ventura County Fire Department

Los Angeles County Department of Regional
Planning

Ventura County Planning Department

A summary of the proposed action and alternatives will be sent to the organizations and individuals on the park's mailing list. Copies of the full DEIS will be available for those wishing to comment.

VII. INDEX

TO BE PREPARED

FOLLOWING INCORPORATION OF REVIEW COMMENTS

APPENDIXES

APPENDIX A: COPY OF EXCERPTS FROM "SITE ANALYSIS"

The following summary is extracted from "Site Analysis, Barrier Free Environmental Study Camp, Santa Monica Mountains National Recreation Area, California" (NPS 1986c), which is on file at NRA headquarters.

copy

BACKGROUND

The search for a site for the Total Access Camping concept has centered on the Santa Monica Mountains where the National Park Service, the California Department of Recreation and Parks, and the Santa Monica Mountains Conservancy are leading a Federal/State/Local program of land acquisition and recreation facilities development. Creation of the National Recreation Area is unique in southern California and offers opportunities for recreational development that do not exist in other publicly owned areas around Los Angeles. A non-profit organization, Total Access Camping has sought public property for development of its concept of an accessible camp, preferring to use its fund raising potential to defray the substantial cost of facility development.

Total Access Camping contacted the NRA staff during its original site search of the Santa Monica Mountains in 1982 and the Decker Canyon site was discussed. The organization subsequently sought State legislation to designate Nicholas Flats within Leo Carillo State Beach as its first choice for the camp location. The proposal was opposed by the State Parks and environmental interests and legislative efforts to secure Nicholas Flats failed. However, the legislative effort succeeded in focusing attention on the need for outdoor recreation facilities for the disabled in southern California.

The Santa Monica Mountains Conservancy, a State agency, received an appropriation of \$600,000 and a mandate to provide outdoor recreation facilities for the disabled in the Santa Monica Mountains. Working with Total Access Camping, the Conservancy attempted to acquire 80 acres of oak savannah adjacent to Malibu Creek State Park for the camp development. Later in bargain sale negotiations with the landowner, a private party made a full price offer and acquired the property for residential development.

The Conservancy was unable to locate another property of comparable quality to Nicholas Flats or the site near Malibu Creek State Park. An offer was made on an 80 acre property in Topanga Canyon that was far less than ideal for the camp development in the opinion of Total Access Camping.

At that point, Total Access Camping approached National Park Service staff for the second time about the use of the Decker Canyon property. Also at that time, the Conservancy indicated that the State appropriation could be used to fund development of facilities for the disabled, should a suitable property for development be found. Following a supporting vote of the Santa Monica Mountains National Recreation Area Advisory Commission, the National Park Service staff began development of an EIS/DCP to determine suitable uses of the Decker Canyon property, including development of an accessible camp. The Conservancy withdrew its offer on the Topanga Canyon site and is holding its appropriation in abeyance pending outcome of the EIS/DCP. Work was progressing on the EIS/DCP when the regional director requested that additional sites be evaluated to assure that the Decker Canyon site was the most appropriate one for the development of a barrier free camp.

ANALYSIS OF NATIONAL PARK SERVICE LANDS

The National Park Service currently owns 11,500 acres and should own nearly 13,000 when current appropriations are obligated about February 1, 1986. The majority of those lands consist of a checkerboard ownership in the last remaining large natural areas of the mountains. The designated major activity sites currently owned, Rancho Sierra Vista, Paramount Ranch, and Franklin Canyon, are only partially developed and are the subject of recent DCPs. All National Park Service lands, with the exception of the Decker Canyon property, are discussed in the park General Management Plan and the Land Protection Plan.

The Decker Canyon property was identified for scenic easement protection, but acquired in fee at the owners' request. At the time of acquisition, the site was threatened with residential development and portions of the site had been graded. The justification for fee acquisition rather than scenic easement was that the property could be used in exchange for higher priority property in the mountains. This change from easement to fee protection after completion of the GMP left the National Park Service in possession of a property for which it had no specific use identified in planning.

When the National Park Service was contacted by Total Access Camping, the Decker Canyon site appeared to be the most eligible for consideration of the accessible camp. Undeveloped lands in Trancas and Zuma Canyons, in the Leo Carillo/Rancho Sierra Vista Connector, in Cheeseboro Canyon, and near Castro Peak were identified by the GMP as natural areas. They contain outstanding natural resources and recreation facility development will be confined to trails and trailheads. Definite proposals for Franklin Canyon are already established in DCP's. Other parcels of 80 or more acres such as Rocky Oaks or Lobo Peak are appropriately developed or constrained by rugged terrain. It should be recognized that most areas in the Santa Monica Mountains possess severe development constraints because of terrain, significant natural or cultural resources, and geological hazards.

AVAILABILITY OF OTHER PUBLIC PROPERTIES

When contacted for the second time by Total Access Camping, and being aware of the events leading up to this contact in January 1985, National Park Service staff contacted other public agencies in the Santa Monica Mountains about the availability of lands for the project.

The California Department of Recreation and Parks manages three large State Parks and several State Beaches within the NRA. Their objectives are similar to National Park Service management objectives, in that the majority of State Park and State Beach lands preserve natural areas. Only a small portion of the lands will be developed with recreation facilities. State campgrounds offer a paraplegic level of accessibility and management is trying to expand accessibility to other facilities and trails.

The State Parks staff does not feel that lands are available for the accessible camp concept in any of their areas. Recent legislation has mandated use of a former ranch house in Malibu Creek State Park for seniors and disabled. The park staff is involved in controversy with Watts Labor Council, named in the legislation to operate the facility, over expansion of the scope of the facility to include new structures. The objectives of Watts Labor Council and Total Access Camping differ significantly making a combined project unrealistic. For the above reasons, state owned lands were not given further consideration.

The Santa Monica Mountains Conservancy was approached by National Park Service staff with an offer to exchange the Decker Canyon property to the conservancy in return for lands either currently held by the Conservancy or lands specifically to be acquired for the National Park Service. The intention was to accomplish a favorable exchange for the National Park Service and allow the Conservancy to develop Decker Canyon for the accessible camp. The Conservancy replied that this type of exchange would have a negative effect on its ability to use appropriations to acquire lands mandated by the legislature. The Conservancy was also concerned with directions from the legislature to produce revenue from land exchanges to attain partial self-sufficiency of its programs.

Like the National Park Service, the Conservancy acquires properties for specific purposes and has designated uses for most of the properties it owns. None of the properties it currently holds for transfer to the National Park Service would be suitable for the accessible camp. These include natural areas in Zuma Canyon and Solstice Canyon, the Peter Strauss Ranch recreation site, and urban enclaves like Temescal and Fryman Canyons.

The Conservancy owns one property that has been discussed for a camp development. The Mason Ranch was acquired for the development of a camp for children with cancer. After acquisition, the MacDonald's Corporation offered

sponsorship of the camp and a larger property was acquired for the project. The Conservancy is currently assessing potential uses of the Mason property. The Conservancy did not offer the property to Total Access Camping or to the National Park Service as a possible camp location.

FUTURE ACQUISITIONS

There is no opportunity for the National Park Service or the State Parks to make a specific acquisition for the accessible camp in the foreseeable future. Threatened properties, hardships, and high priority acquisitions far exceed the current level of appropriations to both agencies. There is very strong competition by housing and commercial developers for land in the Santa Monica Mountains. Attractive sites and even areas identified for fee acquisition are bought and developed before public agencies can be funded to respond. This situation was evident in the loss of the first property sought by the Conservancy for Total Access Camping and may explain why the Conservancy prefers to fund development rather than acquisition for the camp.

The majority of lands remaining to be protected in fee by the National Park Service are identified in the GMP and land protection plan as natural areas offering only backcountry facilities. One site of about 100 acres is planned for acquisition adjacent to Rancho Sierra Vista. This would be the only National Park Service vehicular campground in the NRA and would provide facilities at the common level of accessibility.

The Whizzin property adjacent to Paramount Ranch is currently under threat of development and would be difficult to acquire at current levels of funding. If the National Park Service acquires Whizzin, the site would continue to be used for large events like the RenFaire while much of the Oak Savannah on the property would be rehabilitated and protected from visitor impacts.

The Church Universal and Triumphant property would be developed as the main entry point for NRA visitors, providing day-use and overnight activities. Existing structures would be adapted for a joint National Park Service and State Park headquarters and visitor center. The site would offer little of the natural features sought for the camp. It is also separated from the Natural areas and trails of Malibu Creek State Park by the heavily traveled Las Virgenes Road.

ADAPTATION OF EXISTING CAMPS

The "Existing Recreational Use" report prepared for the NRA in 1980 identifies 7 camps within the boundaries that provide opportunities for

special populations. Three of these are camps for disabled children and three are church camps which serve the disabled only incidentally. Another 11 camp programs operate at nine locations and do not advertise handicapped accessible programs or facilities. Four of these are Boy Scout facilities and three are school summer programs. The remaining four are day-camps, and dude ranches.

Virtually all camps in the mountains operate full-time only in the summer months and offer weekend reservations to groups the remainder of the year. The facilities of the disabled children's camps are developed for children's activities and offer only dormitory accommodations. These facilities do not meet the needs of families or individual adults seeking outdoor recreation. The sites approach full development and are designed for very structured programs.

In short, the existing camps in the mountains are not adaptable to this concept for several reasons. The summer months are dedicated to their individual emphasis programs. The camps are designed for large groups uses that divide the sexes into dormitory accommodations and offer structured scheduled programs. Adaptation for the accessible camp concept would limit use to the off-season and require temporary makeshift alteration of accommodations to serve families and individuals. The ability of existing camps to provide unstructured outdoor recreation and environmental education within a natural area is also limited.

Another obstacle to adaptation would be the willingness of one of these camp programs to adopt or accommodate another program with significantly different objectives for the majority of the year. This could require a commitment to fund raising, alteration of some facilities, managing a cooperative relationship with another operator, and generally accepting a much increased scope of services and liabilities.

FACILITY DEVELOPMENT IN THE MULHOLLAND CORRIDOR

The developable area of many of the properties to be evaluated, including the Decker Canyon property lie within the viewshed of the Mulholland Scenic Parkway corridor. The corridor is cited for protection in the park's authorizing legislation. The western portion of Mulholland is the subject of a completed National Park Service visual resources study that proposes land use categories.

The National Park Service has proposed in the GMP and the Land Protection Plan to preserve the Mulholland corridor primarily through the regulatory powers of state and local government rather than through acquisition of interest in lands. It is imperative that National Park Service development within the Mulholland viewshed be sensitive to scenic resources and provide innovative examples of how such development can be accomplished. Therefore,

development of an accessible camp on properties within the corridor must resolve critical scenic design problems in order to serve as a model project.

During the planning, construction and operational phases of the accessible camp project, National Park Service staff would continue to review private development projects in the Mulholland corridor. Our comments to regulatory agencies may seek to modify or limit private development that has adverse impacts on the scenic resources of the corridor. Therefore, National Park Service development actions on the Decker Canyon property must be exemplary and not impair our credibility in the development review process.

CRITERIA FOR EVALUATING ALTERNATIVE SITES

As requested by the regional director, the park staff and Denver Service Center have conducted an evaluation of potential sites within the boundaries of the recreation area to determine which sites have potential for the development of a barrier-free environmental study camp. The sites evaluated include some previously rejected sites and additional sites not previously considered. The evaluation was based on the following assumptions and criteria.

DESCRIPTION OF PROPOSAL

The barrier-free environmental study camp is envisioned as a residential camp where families with handicapped members may spend several days participating in a variety of activities oriented around the natural and cultural resources of the Santa Monica Mountains National Recreation Area. While the camp will be open to the general public, the target market will be handicapped populations including families and organized groups. The prospectus calls for 24 lodging units suitable for families but adaptable for groups; it may be possible to house up to six persons in some units, but the economic feasibility is based on two guests per unit. Operations should be flexible to accommodate a variety of users. For example, a dining room will be provided but there will also be several "community kitchens" permitting families or groups to prepare their own meals. Staffing will also be flexible since some groups will bring their own staff while others will need staff on-site. While most of the staff can live off-site, qualified personnel will be on duty 24-hours a day to handle emergencies.

The emphasis of the camp will be on environmental education utilizing natural areas available on the site in addition to a "classroom". Ideally, a diversity of natural features would be available within a short distance of the facility. These features should be representative of the varied

environments within the Santa Monica Mountains.

The environmental education programs will be available to day-visitors as well as residents of the camp. At capacity, the camp could expect to have a minimum of 48 residents and up to nearly 100. An average occupancy is expected to be about 75. To maintain a quality experience, the camp should not be expanded beyond the programmed 24 units. The environmental study programs could deteriorate if the capacity becomes too large. The potential for use by day-visitors is unknown but could become a significant factor.

SITE CONSIDERATIONS

Location and Terrain

The site should be in a rural or natural setting with minimal sense of surrounding developed areas. Generally, an existing rural setting is preferable to placing new development in an undisturbed area.

The site should be near major or secondary travel routes to encourage day-visitor participation.

The site should offer some degree of privacy, particularly at night, but could be in or adjacent to an area slated for other daytime activities as long as these activities would not conflict with the purpose of the camp.

The site of about 5-10 acres must be reasonably level, a scarce commodity in the Santa Monicas.

The site should contain or be in close proximity to natural features representative of the Santa Monica mountains and should lend itself to the development of a trail system with gentle grades. Cultural resources, while not essential to the experience of the camp, would expand the interpretive opportunities. Desirable features would include (in order of priority):

- Oak woodlands
- Riparian habitat
- Grasslands
- Rock outcrops
- Chaparral/coastal scrub
- Other (cultural/natural)

Shade should be available along the trail system -- shade structures could be used if natural shading is not available.

The opportunity for equestrian facilities and trails is desirable but not a critical element.

Although consideration will be given to the possibility of future expansion, it has not been a major consideration due to the desire to maintain a relatively small facility to ensure a quality environmental education program.

Utilities

Water, telephone, and power should be available at or in close proximity to the site. If water is not available at the site, there must be assurance that a water source can be developed at reasonable expense.

Wastewater treatment can be handled on site through the use of a septic system if the terrain and soils are suitable. The area required for a septic system could range from 1.5 to 3 acres (including requirements for a backup area should the first site eventually fail).

Fire protection services should be located in close proximity to the facility. The degree of fire hazard is a major consideration.

Access

Access to the site is not critical but evacuation in case of emergencies (such as fire) is a critical consideration. Any site selected should have a minimum of two routes of access which offer suitable emergency evacuation routes.

Land Acquisition

It is not intended to acquire a parcel of land specifically for this development. Any parcels considered should either be in public ownership or have a high priority for acquisition based on the NRA Land Protection Plan with a reasonable expectation that the land can be acquired within the next two years.

STUDY METHODOLOGY

The General Management Plan has been reviewed for proposed activity sites and constraints of management zoning (land classification).

The Land Protection Plan and current priority lists have been reviewed for properties with potential for acquisition within two years.

Tract maps for all properties have been reviewed in a search for reasonably level topography and to determine if access appears feasible.

Potential sites have been visited, to the extent possible, to verify conditions.

It should be noted that the GMP and LPP do not reflect dynamic changes in ownership and development within the NRA boundaries. A number of properties proposed for activity sites have been lost to development.

Sites have been rated according to the following criteria and constraint factors have been applied where appropriate. If it is decided to proceed with detailed investigation of any sites, funding will be required for archeological, endangered species, and soils evaluation, and preparation of development concepts.

RATING SCALE: 1 to 10 with 10 being best. We have attempted to minimize value judgments by using single scores in most instances. If a feature exists, it is rated but the quality of the feature is not evaluated. There are two exceptions where judgment must be used: the septic system potential is a guess until soils have been tested, and the potential for acquiring private land must be based on the best judgment of the NRA staff. To a lesser extent, there is a value judgment related to other natural and cultural features.

A second section of the analysis considers constraints and these are primarily value judgments.

LOCATION/SETTING

Rural.....	10
Natural (Undeveloped).....	5
Urban.....	1

ACCESS (Number Of Evacuation Routes)

one route.....0
two routes.....5
three or more.....10

DAY USE/ENVIRONMENTAL EDUCATION POTENTIAL

On major access route.....10
On secondary route.....8
On local paved road.....3
On dirt/fire road.....0

TERRAIN (Acres Gentle Terrain)

under five.....0
five to ten.....5
over.....10

NATURAL/CULTURAL FEATURES

Oak Woodlands.....10
Riparian.....8
Grasslands.....6
Rock Outcrops.....4
Chaparral/Coastal Scrub....4
Other..... score 4-10 depending on unique attributes (for example, the
archeological site at Decker Canyon might rate 5-10
depending on significance)

HIKING TRAILS/ACCESSIBLE

Existing....score 10 if accessible or can be modified
Potential...score 8, score 5 if difficult to develop

EQUESTRIAN TRAILS

Existing....score 5 - (Add two points if it connects to more extensive
trail system)
Potential...score 3 - (Add two points if it connects to more extensive
trail system)

UTILITIES

Water.....5 if within .5 mi., 10 if at site, 3 if well is required
Telephone 5 if within .5 mi., 10 if at site
Power 5 if within .5 mi., 10 if at site
Sewer 5 if within .5 mi., 10 if at site
Septic Potential.....value judgment - score 2 if it looks
reasonably good, 4 if it looks excellent, 0
if no potential

FIRE PROTECTION

Degree of Hazard

Low.....10
 Medium.....5
 High.....0

Distance to Fire Station

One mile or less.....10
 Three to five miles...5
 Over 5 miles.....0

OWNERSHIP

NRA 10
 State or County.....5
 Conservancy.....8
 Private score 1 to 10 based on priority in LPP and
 probability of funding - (value judgment)

ANALYSIS BASED ON GMP, LAND PROTECTION PLAN, AND ACQUISITION PRIORITIES

<u>SITE</u>	<u>OWNERSHIP</u>	<u>ZONING*</u>	<u>ACTIVITIES</u>
DECKER CANYON	NPS	WB, ROR	None proposed in GMP
PARAMOUNT RANCH (WHIZZIN)	NPS + Adj. Public & Private	ROR, SR	Interpretation, Special Events, Equestrian, Connects to State Park
LAS VIRGENES VALLEY (Includes Diamond X, Quaker, and Universal Life)	High Priority for NPS	ROR, SR	Outdoor Education, Hostel, Envir. Study Area, Alternative Technology Demo Center, NPS Headquarters
ROCKY OAKS	NPS	ROR, SR, WB	Outdoor Education, Group Camping, Equestrian
RANCHO SIERRA VISTA	NPS + Parcel to be acquired - High Priority	ROR, SR	Outdoor Education, Inter- pretation, Equestrian, Environmental Study Area, Camping, Native American Cultural Center, Living History (Farm)

SADDLE PEAK	Public - Non NPS	SR	Hostel
STUNTS RANCH	Public - Non NPS	SNA, SR	Trailhead, Outdoor Education
OLD TOPANGA (SLAUSSON)	Private -To be acquired by SAMO Conservancy	SNA, ROR, SR	Camping
CAMP 8	NPS	SR	Coop Management, Youth Camp, LA County fire camp
ARROYO SEQUIT (MASON)	SAMO Conservancy	WB, SR	Camping, Nature Study
CIRCLE X RANCH	Private - To be acquired by SAMO Conservancy	WB, SNA	None proposed in GMP - Currently a Boy Scout Camp
SOLSTICE CANYON	Private	SNA	Natural area (Has level land within canyon)
CORRAL CANYON	Private	SR	Picnicking, trailhead, camping, hostel
TAPIA COUNTY PARK	LA County	SR	Existing activity site. Group camping, open play area, picnicking
CHARMLEE COUNTY PARK	LA County	ROR, SR	Existing activity site. Trailhead, walk-in camping, picnicking
ENCINAL	Private - NPS to acquire	ROR, SR	Picnicking, camping, fishing
CHEESEBORO	NPS	SNA, SR	Trailhead, interpretation
TRANCUS CANYON	Mixed, some NPS	SNA	Natural area

*Zoning

SNA = Special Natural or Cultural Area
 WB = Watershed Buffer
 ROR = Scenic and Resource Oriented Recreation
 SR = Structured Recreation or Park Operations (This zoning occurs frequently as an enclave within a more restrictively zoned area.)

NUMERICAL RANKING OF EVALUATED PROPERTIES

RANKING BASED ON SITE ANALYSIS

Decker Canyon	127.00
Rocky Oaks	124.75
Paramount/Whizzin	114.75
Arroyo Sequit/Mason	112.75
Rancho Sierra Vista	103.00
Tapia County Park	96.00
Quaker	96.00
Claretville	93.00
Rancho Sierra Vista Addition	87.00
Camp 8	57.50
Circle X Ranch	51.25
Slausson/Old Topanga	44.75

RANKING WITH CONSTRAINTS FACTORED IN

Decker Canyon	124.00
Rocky Oaks	109.75
Arroyo Sequit/Mason	98.75
Paramount/Whizzin	96.75
Tapia County Park	91.00
Rancho Sierra Vista	88.00
Rancho Sierra Vista Addition	67.00
Claretville	62.00
Quaker	60.00
Camp 8	52.50
Circle X Ranch	41.25
Slausson/Old Topanga	34.75

OTHER SITES GIVEN INITIAL EVALUATION BUT REJECTED

Stunt Ranch - Limited site scheduled for use by UCLA as research facility.
(Site observed from adjacent ridge.)

Solstice Canyon - Environmentally sensitive area. (Site not visited.)

Saddle Peak - Mountain top site with poor access & few natural features but spectacular views.

Encinal - Potential National Park Service acquisition but severely altered land forms and exotic vegetation; limited access through easements. (Site not visited.)

Charmlee County Park - Usable sites developed for camping, nature study, picnics; park does not appear to be in full operation.

Corral Canyon - Small area with potential land acquisition problems. (Site

not visited.)

Cheeseboro - Environmentally sensitive area. (Site not visited.)

Trancas Canyon - Environmentally sensitive area. (Site not visited.)

Numerous other sites were not evaluated due to known constraints.

APPENDIX B: APPLICABLE FEDERAL LAWS AFFECTING PLANNING

The Act of August, 1916 (National Park Service organic act) (16 USC 1 et seq.)

The National Environmental Policy Act of 1969 (NEPA) (42 USC 4321 et seq.)

The National Historic Preservation Act of 1966 (16 USC 470)

Executive Order 11593, Protection and Enhancement of the Cultural Environment (36 FR 8921)

American Indian Religious Freedom Act of 1978 (PL 95-341)

Land and Water Conservation Fund Act (16 USC 460d, 4601-4 et seq.)

Endangered Species Act of 1973 (16 USC 1531 et seq.)

The Coastal Zone Management Act of 1972 (16 USC 1451 et seq.)

Executive Order 11988 of May 24, 1977, Floodplain Management (3 CFR 121 (Supp. 177))

Executive Order 11990 of May 24, 1977, Protection of Wetlands (3 CFR 121 (Supp. 177))

Executive Order 11752, Prevention, Control, and Abatement of Environmental Pollution at Federal Facilities (38 FR 34793-34797)

The Clean Air Act of 1963 and Amendments (42 USC 7401 et seq.)

The Architectural Barriers Act of 1968 (PL 90-480, 82 Stat. 718, 42 USC 4151 et seq.)

The Rehabilitation Act of 1973 (PL 93-112, 87 Stat. 357, 29 USC 701 et seq., and amendments)

Concessions Policy Act of 1965 (PL 89-249, 79 Stat. 969, 16 USC 20)

Federal Water Pollution Control Act Amendments of 1972 (October 18, 1972, PL 92-500, 86 Stat. 816, 33 USC 1251 et seq.)

Safe Drinking Water Act of 1974 (December 16, 1974, PL 93-523, 88 Stat. 1660, 42 USC 300f-j9)

APPENDIX C:
WASTEWATER STUDY AND ENGINEERING ANALYSIS
DECKER CANYON
SANTA MONICA NATIONAL RECREATION AREA

I. INTRODUCTION

The purpose of this appendix is to document the engineering investigations and evaluations conducted and recommendations made concerning wastewater treatment and disposal for the proposed development alternative at Decker Canyon. This work occurred in the time frame of mid-November 1986 to late January 1987. At the start of the engineering investigations, only proposed development alternatives III and IV included facilities that generated wastewater that required treatment. As the investigation progressed, it was determined that development alternative IV, as originally proposed, was not viable from a wastewater treatment and disposal standpoint. After the determination that development alternative IV could not be implemented because of wastewater disposal constraints, alternative IV was modified by changing building sites. Development alternative IV, as modified, provides adequate opportunities for wastewater treatment and disposal. Each alternative, with associated graphics, is examined in detail in this appendix.

II. LOCAL AND STATE REGULATORY INVOLVEMENT

Several state and local regulatory agencies are involved with wastewater treatment and disposal at the Decker Canyon location. The county of Los Angeles has primary jurisdiction over on-site treatment involving subsurface disposal beds, absorption trenches, and seepage pits. The state Regional Water Quality Control Board No. 4 and the County of Los Angeles have dual jurisdiction concerning wastewater treatment facilities such as lagoons, mechanical treatment plants, sand filters, and other secondary treatment devices. The state (Water Quality Control Board No. 4) has sole jurisdiction concerning discharge of treated effluent to groundwater (irrigation) or point-source discharge to surface water. Individuals, as listed in the consultation section later in this appendix, were contacted to determine applicable regulations, codes, and design guidelines.

III. WASTEWATER DESIGN FLOWS (ESTIMATES)

A. Development Alternative III (Day Use)

1. Day use at the proposed activity center is projected using existing visitation figures at the Franklin Canyon and Rocky Oaks developed areas of Santa Monica Mountains National Recreation Area. Average day use in the peak month (July) is projected at 60 persons per day for the activity center at Decker Canyon.
(60 persons/day) (5 gal/person/day) = 300 gal/day
2. six (6) day staff (National Park Service and teachers)
(6 persons/day) (10 gal/person/day) = 60 gal/day

Total 360 gal/day

B. Development Alternative IV (Barrier-Free Environmental Education Camp)

1. Overnight visitors
(75 persons/day) (60 gal/person/day) = 4,500 gal/day
 2. Cafeteria (three meals per day per patron)
(80 patrons/day) (15 gal/patron/day) = 1,200 gal/day
 3. Employees (day)
(12 day employees) (15 gal/person/day) = 180 gal/day
 4. Employees (resident)
(4 resident employees) (75 gal/person/day) = 300 gal/day
 5. Activity center
From development alternative III = 360 gal/day
- Total Estimated Flow = 6,540 gal/day
Use Design Flow = 6,500 gal/day

Note:

Assumes water conservation fixtures as required by Los Angeles County Plumbing Code.

Per capita flow rates derived from publication "Environmental Health Practice in Recreational Areas" and National Park Service design parameters.

"ULTRA" water conservation plumbing fixtures (1.0 gal/flush) were considered for this project with the perception that wastewater flows could be reduced, resulting in a corresponding decrease in wastewater treatment capacity needed. However, Los Angeles County regulations do not permit any reduction in the size or capacity of on-site treatment facilities when "ULTRA" water conservation devices are used.

IV. WASTEWATER CHARACTERISTICS

It is anticipated that domestic, residential-type wastewater will be generated at the facilities as proposed in alternatives III and IV. Published data and past National Park Service experience from similar facilities indicate that wastewater generated from facilities proposed at Decker Canyon can be expected to exhibit the following characteristics:

Raw Wastewater

BOD ₅	275 mg/L
Suspended Solids	275 mg/L
COD	675 mg/L

Septic Tank Effluent

BOD ₅	160 mg/L
Suspended Solids	125 mg/L
COD	599 mg/L

These characteristics are valid based on the following restrictions. A grease trap would be installed to serve the cafeteria. To ensure that organic concentrations in the wastewater were not elevated, garbage grinders would not be installed in the lodging units associated with alternative IV. Wastewaters containing discharges from laundry equipment can be troublesome where on-site treatment is involved. Because areas for on-site treatment are at a premium at Decker Canyon, no laundry facilities would be located at Decker Canyon and linen and towel cleaning would be accomplished commercially off-site.

V. WASTEWATER TREATMENT AND DISPOSAL OPTIONS

Design Objectives

In analyzing the options for wastewater treatment and disposal the following design objectives and criteria were used:

Design guidelines that were outlined in the "Alternatives" section of this EIS/DCP for Decker Canyon concerning sensitivity to natural and cultural resources, maintaining visual integrity of site with emphasis on continuity of drainages and grassland areas, and ensuring that facilities are subordinate to the natural landscape.

Using facilities that exhibit low initial costs.

Using facilities with simple and cost-effective operation and maintenance procedures.

Providing facilities that produce an effluent that meets applicable local, state, and federal standards.

Options Considered

A. On-Site Wastewater Treatment and Disposal

This option involves a treatment phase and separate disposal phase. The purpose of the treatment phase is to transform the raw wastewater into an effluent suited to the disposal component such that wastewater can be disposed of properly in conformance with public health and environmental regulations. Pretreatment in this option is provided by a septic tank that removes nearly all settleable solids and scum so that a reasonably clear liquid is discharged into the disposal phase. Intermittent sand filters and mechanical aerobic treatment units can also be considered for on-site treatment.

The disposal phase of this option includes absorption trenches, subsurface disposal beds, and seepage pits. All are covered excavations filled with porous media (1"-diameter rock) with a means for introducing and distributing the

septic tank effluent throughout the system. Trenches and beds are excavations of relatively large areal extent that usually rely on the upper soil horizons to absorb the wastewater through the bottom and sidewalls of the excavation. Seepage pits are deep excavations designed primarily for lateral absorption of the septic tank effluent through the sidewalls of the excavation. Seepage pits are used only where the groundwater level is well below the bottom of it and where beds or trenches are not feasible because of unavailability of large areas of suitable land.

In applying these general characteristics of on-site treatment and disposal to Decker Canyon, it is helpful to review a site plan as shown in Exhibit I, which shows the surface features existing and the proposed development (brown shading) as originally envisioned for alternative IV. The green-shaded portion represents land with slopes of 15 percent and greater, and the blue area indicates an area 100 feet from centerline on each side of Trancas Creek. County regulations and standard engineering practice prohibit locating treatment facilities in areas immediately adjacent to streams. The light red shading depicts sensitive resource areas.

On-site wastewater treatment and disposal for alternatives III and IV meet the design objectives previously listed if suitable land area is available. Past National Park Service experience indicates that this type of system has a low first cost (capital) and low operation and maintenance costs for the flow rates associated with alternatives III and IV.

A prerequisite to locating and designing soil absorption trenches, subsurface disposal beds, or seepage pits is to investigate the subsurface geology. As can be seen from Exhibit I, the only area available for wastewater disposal facilities is that area shaded in white. Because of the large design flow associated with alternative IV (6,500 gpd) relative to alternative III (400 gpd), finding suitable land area for disposal areas for alternative IV became the priority task. Exhibit II shows the locations of soils investigation work. Boreholes B1 and B2 were investigated in September 1985 for preliminary building site investigations. On December 18, 1986, boreholes B3, B4, and B5 were investigated for the purposes of locating suitable area for wastewater disposal facilities associated with alternative IV. The logs on each hole, as reported by McClelland Engineers, Ventura, CA, are contained in Exhibit III.

The logs on B3 and B4 reveal that bedrock was encountered at very shallow depths--5 feet and 2 feet, respectively. Borehole B5 indicates a tight clay layer at 9 feet with a water table at 13 feet and rock at 14 feet.

The only areas at Decker that provide sufficient surface area for absorption trenches and that are not dedicated to other uses or restricted by topography are adjacent to boreholes B3 and B4. Shallow depth to bedrock at these locations precludes the use of trenches or beds. Likewise, seepage pits are not appropriate in this area because of the shallow depth to bedrock.

The area adjacent to borehole B5 is not adequate for seepage pits because of the heavy soils at 9 feet and groundwater table at 13 feet.

In summary, septic tank and absorption trenches can be implemented for alternative III because design flows are small. However, neither absorption

trenches, subsurface disposal beds, nor seepage pits can be used for alternative IV because of the relatively large design flow required (6,500 gpd) and the site constraints involving topography, archaeological sites, and poor subsurface conditions.

B. Advanced Wastewater Treatment and Disposal

Because on-site methods did not provide a satisfactory solution for alternative IV, more complex and costly methods were investigated. Several types of treatment processes--ranging from lagoons to package treatment plants to physical-chemical treatment units--can effectively be used. These processes vary from moderate in cost to very costly. The treatment phase can be accomplished, if funding permits; however, the disposal phase has limited options available and is therefore controlling. A discussion of disposal phase options follows.

1. Lagoons

Total containment lagoons (sometimes referred as stabilization ponds) have been used successfully at numerous National Park Service developments with similar flow rates to those envisioned at Decker Canyon. Biological treatment is provided in the primary lagoon cells. Secondary lagoon cells provide additional treatment and a small amount of disposal by infiltration of effluent through the lagoon bottom. The main disposal mechanism associated with total containment lagoons is evaporation from the surface of the primary and secondary cells. The size of the primary cells (two) is predicated on the capacity needed to stabilize the organic component of the raw wastewater. At Decker Canyon, it is estimated that each primary cell would require 1/2 acre.

Because the only surface area large enough to accommodate proposed lagoons is in the vicinity of boreholes B3 and B4 (see Exhibit II), lagoon excavation would be in rock. Cushion material (sand) would have to be imported and placed over the rock, and the lagoon bottoms and sidewalls would have to be lined with an impermeable liner.

With the liner in place the only mechanism for disposal is evaporation from the surface of the primary and secondary cells. Under normal circumstances the secondary cell usually needs to be two to three times larger than the primary cells to provide the required surface area for complete evaporation.

However, a review of the climatological data indicates that heavier rainfall can be expected for the Decker Canyon area (see Exhibit IV) than for areas just a few miles away. This discrepancy can be attributed to the alignment and elevation of the mountains in this area. In discussion with Los Angeles County Health Department officials, evaporative lagoons have not performed satisfactorily in areas similar to Decker Canyon because of the proximity to the ocean and the prevalent high humidities for most of the year. The county officials, based on extensive experience and collected data, recommended against using evaporative lagoons for disposal at the Decker Canyon area.

Of greater concern than the county's reluctance to approve evaporative lagoons is the fact that the lagoon option does not comply with two of the design objectives previously listed. The lagoons would have to be on as level a site as possible. The grassland in the vicinity of boreholes B3 and B4 is probably the only suitable location. Including the fencing required around the lagoons, a minimum of 3 acres (ignoring climatological constraints) would have to be dedicated to these wastewater facilities. This location is at the prime focal point when seen from the proposed development area, thus severely disrupting the visual integrity of the site. Continuity of the grasslands would also be severely impacted.

Investment cost to construct a lagoon system would be at the moderate level because of the necessary rock excavation and the resultant requirement for importing cushion material and installing an impermeable liner.

Based on all of these constraints, it was strongly recommended that evaporative lagoons not be implemented at Decker Canyon.

2. Irrigation

Irrigation involves application of an effluent that meets secondary standards (30 mg/L BOD₅, 30 mg/L suspended solids, and 200 coliforms per 100 ml) to a vegetated land surface. A portion of the flow percolates to the groundwater and the remainder is used by the vegetation. Application of the effluent is normally by spray irrigation from fixed risers.

It is feasible, at an elevated life-cycle cost, to install treatment processes that will provide an effluent that will meet secondary standards. Again, the problem is disposing of the treated effluent.

Criteria for spray irrigation of effluents, as established by the Environmental Protection Agency (EPA), include: (1) slope of irrigated area shall not exceed 15 percent and (2) depth to bedrock shall be 5 feet or greater. At the Decker Canyon site, this limits the area for spray irrigation to the area adjacent to borehole B3.

The size of the irrigation area required to dispose of 6,500 gallons of effluent per day is predicated on application rate. A fairly common application rate for the soil type and vegetation present at Decker Canyon is 2 inches/acre/week. Therefore 1 to 1 1/4 acres (gross) is required, depending on sprinkler pattern. State regulations also require that an area equal to 100 percent of the original spray area be set aside for future use. Therefore, 2 1/2 acres are required for meeting the previously outlined EPA criteria. By utilizing every piece of suitable land in the vicinity of borehole B5, it may be possible to obtain 2 1/2 acres for spray irrigation. Extensive soil borings would have to be taken to determine the exact layout of any proposed irrigation system.

It should be noted that the spray irrigation cannot take place when it is raining or when the ground is saturated from a previous storm, and effluent storage is required during these wet periods. The storage requirement at Decker Canyon would be in the range of 50,000 to 75,000

gallons and could be in the form of a pond or buried concrete tank. Those structures will add additional costs to this option.

The irrigation option does not comply with three of the design objectives previously listed. The visual integrity of one of the major focal points of the site would be impaired by the large green grass area artificially created by irrigation. Initial investment cost would be moderate to high. Operation and maintenance costs would be moderate and involve a significant number of complex tasks.

Based on the failure of this option to satisfactorily meet the majority of the design objectives and that there is only a small site that only marginally meets engineering criteria for irrigation, it was strongly recommended that irrigation not be implemented for effluent disposal at Decker Canyon.

3. Direct Discharge

Direct discharge involves taking effluent from the treatment phase and discharging the effluent directly to a surface water course. The standards for direct effluent discharge are usually more stringent than for secondary standards. The state Regional Water Quality Board would set the effluent standards, but the following could be expected:

BOD ₅	10 mg/L
Suspended Solids	10 mg/L
Coliforms	100 coliforms/100 ml

To achieve effluent of this high quality usually requires two or three wastewater treatment processes in series. At a minimum flow, equalization followed by biological treatment, filtration, and disinfection would be required. If nutrient removal is required (phosphate and nitrate) additional processes would be required.

Siting such treatment facilities at Decker Canyon also presents problems similar to those as discussed in the on-site option. The physical facilities associated with the direct discharge option would include two buildings to house the treatment equipment, tanks, laboratory, and site improvements, which would occupy 1/4 to 1/3 acre. The location of the treatment facility would be on the far side of the large grassy area in the vicinity of borehole B4. Discharge of treated effluent would be to a natural drainage way that feeds into Trancas Creek below the oak grove location.

The visual impact of this option would not be as severe as in the other options previously outlined. The remaining visual impacts could be mitigated satisfactorily through design. However, the impacts on the riparian areas would be extensive. Even with a high quality effluent, Trancas Creek would be impacted. The sheer volume of 6,500 gpd of water into normally dry drainages and into Trancas Creek would drastically modify their natural characteristics.

Investment costs to implement this option would be very high. Operation and maintenance cost will also be high and involve many complex tasks.

Based on the failure of this option to satisfactorily meet the majority of the design objectives, especially costs and impacts on the riparian zones, it was strongly recommended that direct discharge not be implemented at Decker Canyon.

4. Hauling

Hauling raw wastewater or treated effluent from the site in transport vehicles is usually not an economically viable option unless special circumstances exist. The county of Los Angeles does not permit hauling wastewater from permanent developments. This option cannot be implemented at Decker Canyon.

VI. RECOMMENDATION

After investigating and evaluating the options listed for wastewater treatment and disposal at Decker Canyon, this author could not recommend that development alternative IV be implemented as originally configured because of the limitations associated with wastewater treatment and disposal.

VII. MODIFIED DEVELOPMENT ALTERNATIVE IV

After preliminary discussions with National Park Service personnel concerning the recommendation contained in section VI above, it was decided to explore the possibility of modifying alternative IV by relocating the building sites. This relocation made land areas that were formerly dedicated to building sites available for on-site treatment and disposal (see Exhibit V).

Subsurface data for borehole B2 was obtained in October 1985 by McClelland Engineers as part of preliminary building site investigation. In conjunction with this work a seepage pit percolation test was conducted in borehole B2 in accordance with the requirements of the county of Los Angeles, Department of Health Services. The results of this investigation are contained in Exhibit VI.

The county requires a minimum depth of sidewall in a seepage pit to be 10 feet. Borehole B2 indicates that 10 feet of permeable soil is available at the proposed wastewater disposal site. Results of the percolation test indicate that adequate permeability is available to permit installation of seepage pits. Sufficient area is available in the immediate area around borehole B2 to provide for 100 percent future expansion as required by the county.

VIII. RECOMMENDED METHOD FOR WASTEWATER TREATMENT AND DISPOSAL

The recommended method for wastewater treatment and disposal of the modified alternative IV is depicted in Exhibit V. Investment cost for the recommended method is \$277,000 (see itemized cost estimate in Exhibit VII).

IX. CONSULTATION WITH OTHERS

Norman Groom, R.S., Chief Environmental Health Officer,
County of Los Angeles

Jack Petralia, R.S., Chief Environmental Health Officer
County of Los Angeles

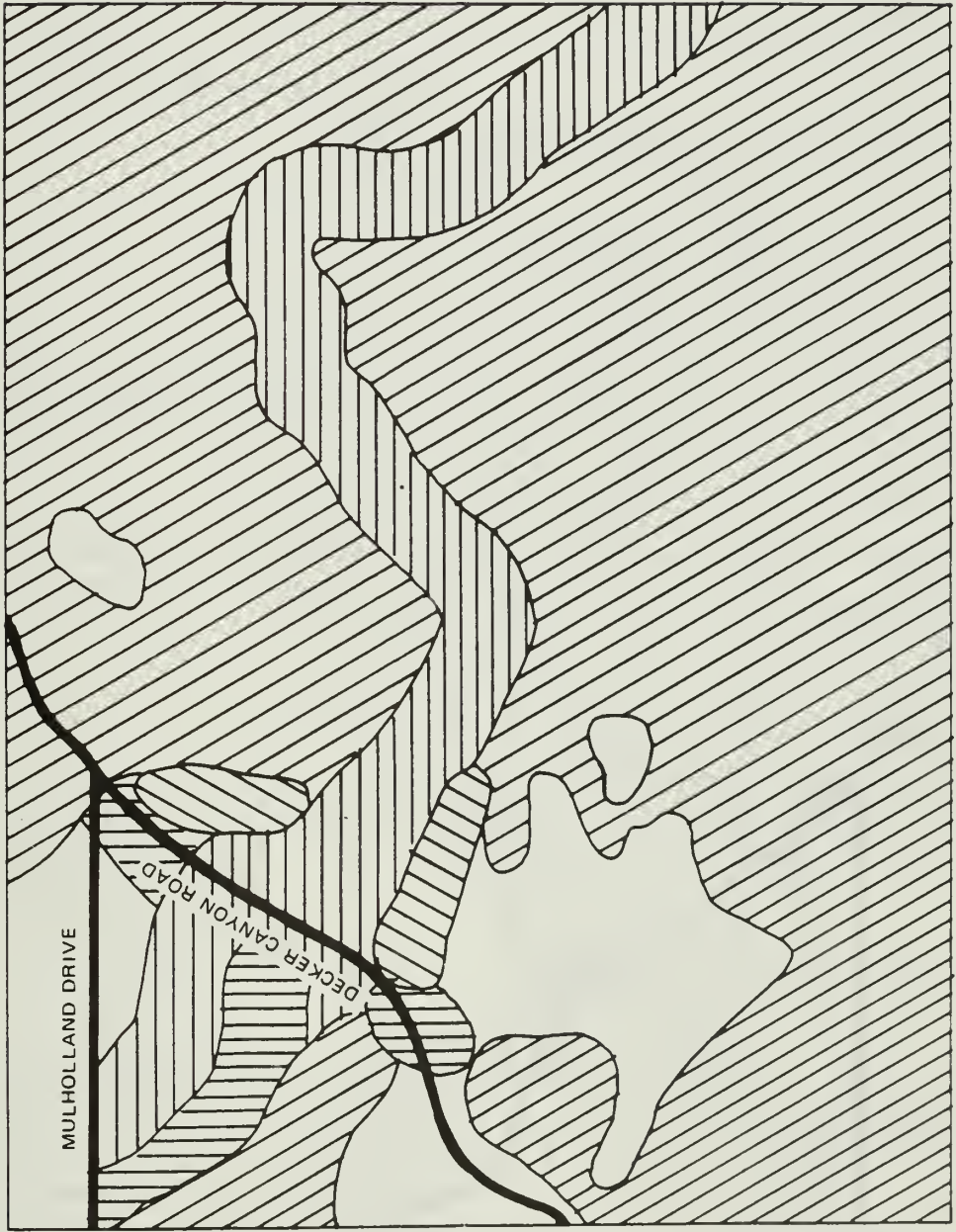
Brian Scanlon, P.E., Department of Public Works
County of Los Angeles

Jim Ross, Water Quality Control Board No. 4
State of California - Los Angeles

Nelson Wong, Water Quality Control Board No. 4
State of California - Los Angeles

X. PREPARER

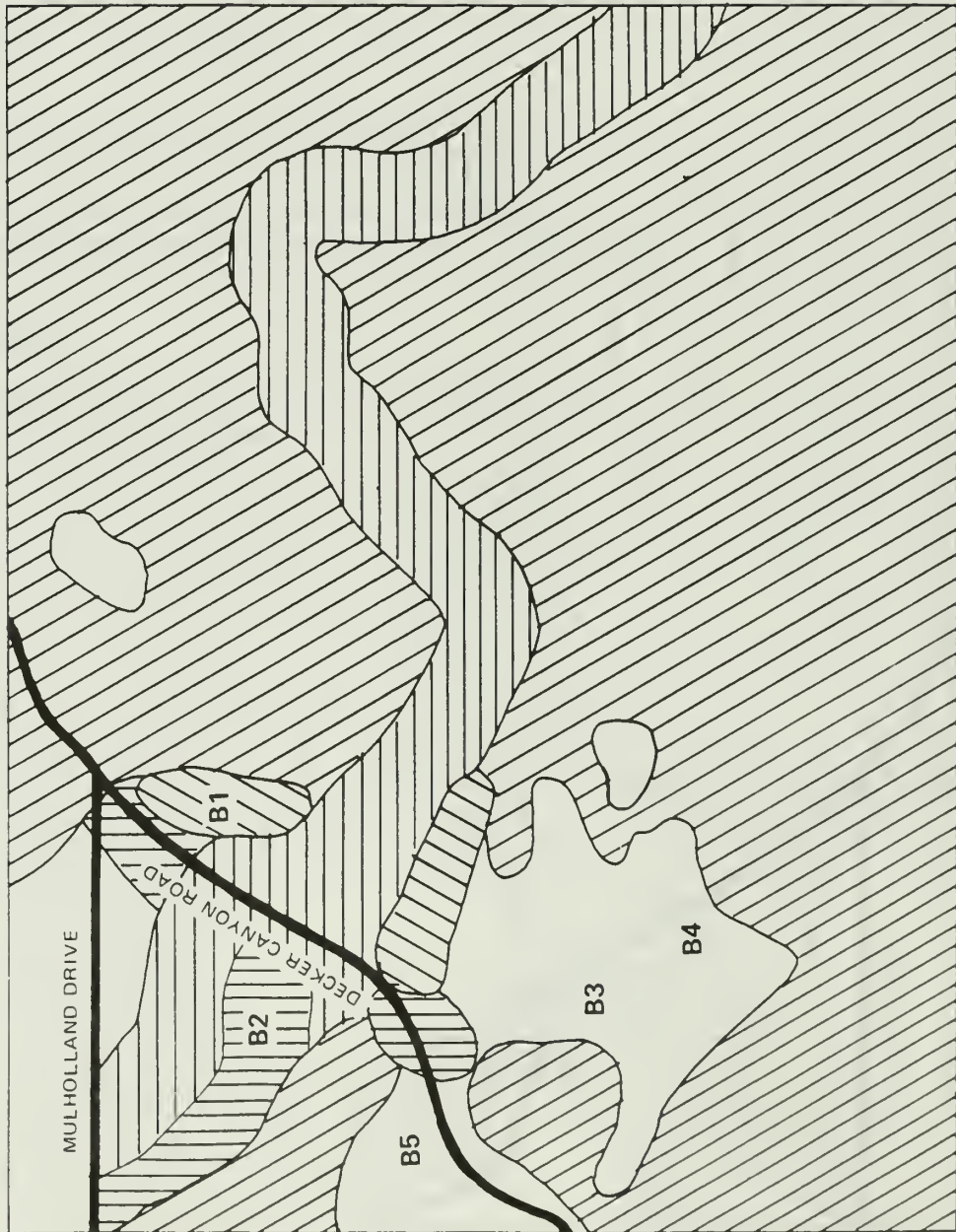
Douglas DeNio, P.E., Denver Service Center
National Park Service







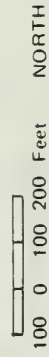
- ALTERNATIVE 4
DEVELOPMENT AREA
- SENSITIVE RESOURCE AREA
- STREAM AREA
- MOUNTAIN AREA

100 0 100 200 Feet NORTH

DECKER CANYON
SANTA MONICA MOUNTAINS
NATIONAL RECREATION AREA



- 
 ALTERNATIVE 4
DEVELOPMENT AREA
- 
 SENSITIVE RESOURCE AREA
- 
 STREAM AREA
- 
 MOUNTAIN AREA



DECKER CANYON
 SANTA MONICA MOUNTAINS
 NATIONAL RECREATION AREA

LOG OF BORING NO. 1

DEPTH, FT	SYMBOL	SAMPLES	LOCATION: See Plate 2	BLOWS PER FT	* % PASSING NO. 200 SIEVE	UNIT DRY WT. LB PER CU FT	WATER CONTENT, %			UNDRAINED SHEAR STRENGTH				
							Plastic Limit	Natural	Liquid Limit	KIPS PER SQ FT				
							+	—	+	0.5	1.0	1.5	2.0	2.5
							+-----+-----+			UNIT WEIGHT, PCF				
							20	40	60	Dry Total				
										90	100	110	120	130
1			Firm to stiff, dark brown sandy clay with scattered coarse sand-sized rock fragments, roots, and organics, dry (1.5')	19		101.8	●	+	+		■	□		
2			Medium dense, brown fine sandy silt with scattered coarse sand-sized rock fragments, slightly damp (3.0')											
3			Medium dense to dense, reddish brown, gravelly sand to sandy gravel, slightly silty to silty, damp											
4			- silty fine sand to 5'											
5			- silty fine to medium sand becoming gravelly with depth, 5' to 10'	5	42	95.9	●				■	□		◇→
6														
7														
8														
9														
10			- sandy gravel of fine to coarse gravel-sized rock fragments below 10', slightly silty	5	17	108.9	●				■	□		◇→
11														
12														
13														
14														
15														
16														
17														
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97														
98														
99														
100														

* Drop Height: 12 inches
Hammer Weight: 2600 pounds

JOB NO.: 0585-1320
COMPLETION DEPTH: 20.0 Ft
DATE: September 20, 1985
DEPTH TO WATER IN BORING: Dry
CAVED AT: Open
DATE: September 20, 1985

SAMPLER:
2 3/8-in. I.D. by 3-in. O.D.
Liner Sampler
Disturbed Jar Sample of Cuttings
DRILLING METHOD:
2-Ft Diameter
Bucket Auger

STRENGTH LEGEND
● Unconfined Compression
▲ Unconsolidated-Undrained Triaxial Compression
◆ Miniature Vane
(open symbols above indicate remolded tests)
◇ Torvane
■ Hand Penetrometer

LOG OF BORING NO. 2

DEPTH, FT	SYMBOL	SAMPLES	LOCATION: See Plate 2	BLOWS PER FT	% PASSING NO. 200 SIEVE	UNIT DRY WT LB PER CU FT	WATER CONTENT, %			UNDRAINED SHEAR STRENGTH					DEPTH, M
							Plastic Limit	Natural	Liquid Limit	KIPS PER SQ FT					
										0.5 1.0 1.5 2.0 2.5					
										UNIT WEIGHT, PCF Dry ■ Total □					
							20	40	60	90	100	110	120	130	
2			Stiff, brown sandy clay, moist - dry becoming moist at 2'	8	67	101.7	●	+	+			■	□	◇	
4			- mottled with gray colorations at 4'												
			(5.0')												
6			Medium dense, brown clayey fine to coarse gravel, slightly sandy, moist	9	34	116.3	●					■	◇	◇	
8															
			(10.0')												
10			Brown weathered volcanic bedrock, damp												
12															
14															
16															
18															
			(20.0')												
20															

* Drop Height: 12 inches
Hammer Weight: 2600 pounds

* Drop Height: 12 inches
Hammer Weight: 2600 pounds

JOB NO.: 0585-1320

COMPLETION DEPTH: 20.0 Ft

DATE: September 20, 1985

DEPTH TO WATER IN BORING: Dry

CAVED AT: Open

DATE: September 20, 1985

SAMPLER:

2 3/8-in. I.D. by 3-in. O.D.

Liner Sampler

Disturbed Jar Sample of Cuttings

DRILLING METHOD:

2-Ft Diameter

Bucket Auger

STRENGTH LEGEND

- Unconfined Compression
- ▲ Unconsolidated-Undrained Triaxial Compression
- ◆ Miniature Vane

(open symbols above indicate remolded tests)

- ◇ Torvane
- Hand Penetrometer

LOGS OF BORING NOS. 3 & 4

SYMBOL	SAMPLES	BORING : B-3 LOCATION : National Park Service Site Near Decker Canyon Road and Mulholland Highway About 1,519 ft. SURFACE EL : above MSL	U.S.C.S. GROUP SYMBOL	BLOWS PER FT.	% PASSING NO. 200 SIEVE	WATER CONTENT, %			UNDRAINED SHEAR STRENGTH					
						Plastic Limit	Natural Limit	Liquid Limit	KIPS PER SQ FT 0.5 1.0 1.5 2.0 2.5					
						UNIT WEIGHT, PCF								
						■ Dry □ Total								
						80 90 100 110 120								
	Soft brown sandy Clay with gravel, dry (3.0')	50/3"												
	Weathered dark gray volcanic Rock (5.0')													
	Dark gray volcanic Rock													
	(End of Boring at 8.0')													

SYMBOL	SAMPLES	BORING : B-4 LOCATION : National Park Service Site Near Decker Canyon Road and Mulholland Highway SURFACE EL :	U.S.C.S. GROUP SYMBOL	BLOWS PER FT.	% PASSING NO. 200 SIEVE	WATER CONTENT, %			UNDRAINED SHEAR STRENGTH					
						Plastic Limit	Natural Limit	Liquid Limit	KIPS PER SQ FT 0.5 1.0 1.5 2.0 2.5					
						UNIT WEIGHT, PCF								
						■ Dry □ Total								
						80 90 100 110 120								
	Reddish brown sandy Clay, dry (2.0')													
	Weathered dark gray volcanic Rock													
	(End of Boring at 5.0')													

B NO.: 0586-1407 COMPLETION DEPTH : B-3=8.0'; B-4=5.0' DATE : December 18, 1986 DEPTH TO WATER : Not encountered TESTED AT : Open DATE : December 18, 1986	SAMPLER : 3-in-OD, 2-1/2-in-ID Liner Sampler 2-in-OD, 1-3/8-in-ID SPT Split Spoon 3-in-OD, 2-7/8-in-ID Thin Wall Tube Auger BLOWS : for last 12" of 18" penetration; values for Liner Sampler shown () DRILLING METHOD : Hollow Stem Auger	FIELD	STRENGTH LEGEND ● Unconfined Compression ▲ Unconsolidated-Undrained Triaxial ◆ Miniature Vane X Direct Shear (open symbols indicate remolded tests) x Torvane x Hand Penetrometer

2: L E L L A N D
1 1 0 2 1 0 0

LOGS OF BORING NOS. 5

DEPTH, FT.	SYMBOL	SAMPLES	BORING : LOCATION : National Park Service Site Near Decker Canyon Road and Mulholland Highway About 1,519 ft. SURFACE EL : above MSL	U.S.C.S. GROUP SYMBOL	BLOWS PER FT.	% PASSING NO. 200 SIEVE	WATER CONTENT, %			UNDRAINED SHEAR STRENGTH	
							Plastic Limit	Natural Limit	Liquid Limit	KIPS PER SQ FT 0.5 1.0 1.5 2.0 2.5	
										UNIT WEIGHT, PCF ■ Dry □ Total 80 90 100 110 120	
5			Reddish brown silty Clay with gravel, moist (2.0')		43	49					
10			Hard mottled grayish brown sandy Clay with scattered gravel, damp to moist		62	47					
15			Dark gray volcanic rock (14.0')		31	0					
20			(End of Boring at 20.0')								
DEPTH, FT.	SYMBOL	SAMPLES	BORING : LOCATION : SURFACE EL :	U.S.C.S. GROUP SYMBOL	BLOWS PER FT.	% PASSING NO. 200 SIEVE	WATER CONTENT, %			UNDRAINED SHEAR STRENGTH	
							Plastic Limit	Natural Limit	Liquid Limit	KIPS PER SQ FT 0.5 1.0 1.5 2.0 2.5	
										UNIT WEIGHT, PCF ■ Dry □ Total 80 90 100 110 120	
5											
10											
15											
20											

JOB NO.: 0586-1407
COMPLETION DEPTH : 20.0 ft.
DATE : December 18, 1986

DEPTH TO WATER : 13.0 ft.
CAVED AT : Open
DATE : December 18, 1986

SAMPLER :
3-in-OD, 2-1/2-in-ID Liner Sampler
2-in-OD, 1-3/8-in-ID SPT Split Spoon
3-in-OD, 2-7/8-in-ID Thin Wall Tube Auger

BLOWS : for least 12" of 18" penetration;
values for Liner Sampler shown ().

DRILLING METHOD :
Hollow Stem Auger

STRENGTH LEGEND

- Unconfined Compression
- ▲ Unconsolidated-Undrained Triaxial
- ◆ Miniature Vane
- ⊗ Direct Shear
- ⊗ Torvane ⊗ Hand Penetrometer

(open symbols indicate remolded tests)

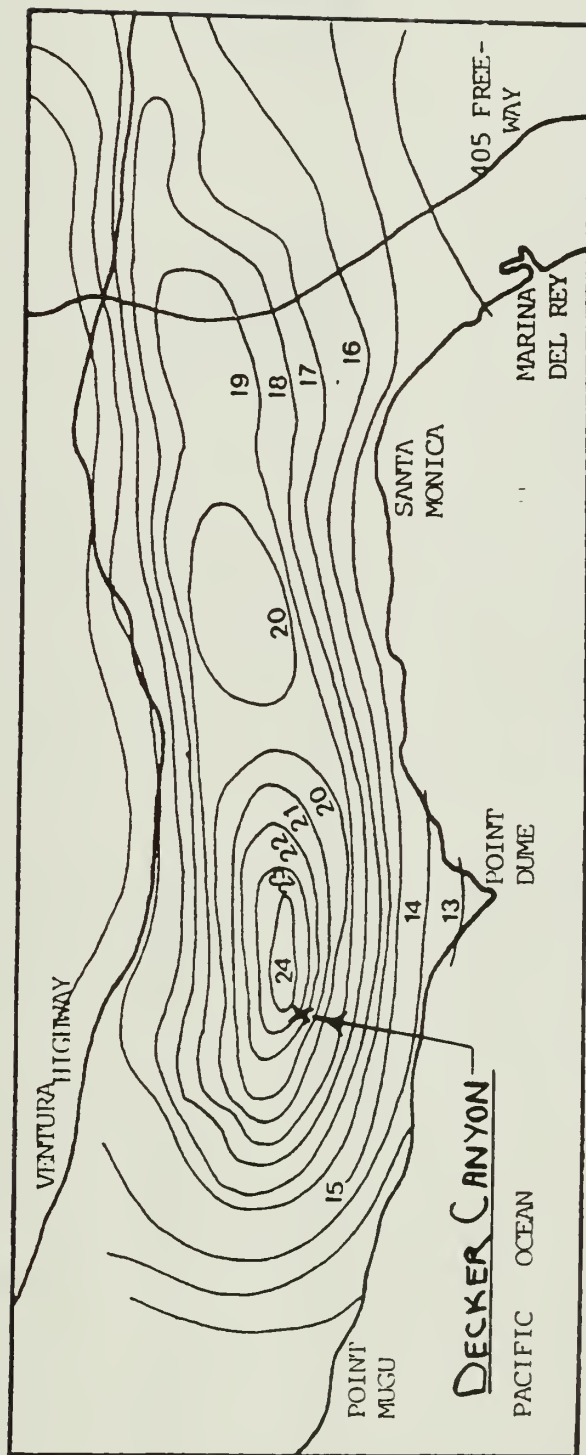
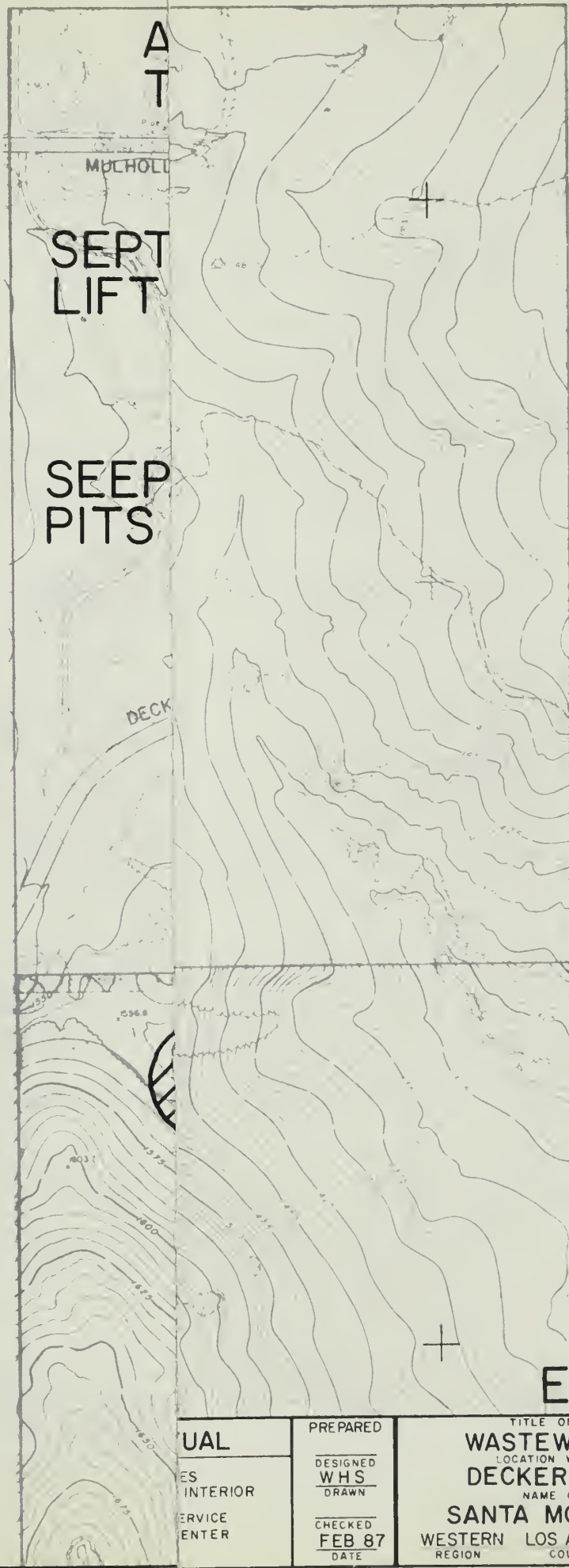


FIGURE 7: RAINFALL ISOHYETS, SANTA MONICA MOUNTAINS AND VICINITY (Environmental Protection Agency, 1977). (Contours at one inch intervals)



NORTH

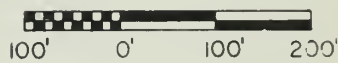


EXHIBIT V

BASIC DATA

QUAL DES INTERIOR SERVICE CENTER	PREPARED	TITLE OF DRAWING WASTEWATER STUDY LOCATION WITHIN PARK DECKER CANYON NAME OF PARK SANTA MONICA NRA REGION LOS ANGELES, CALIFORNIA COUNTY STATE	DRAWING NO	
	DESIGNED WHS DRAWN		PKG NO	SHEET
	CHECKED FEB 87 DATE		<input checked="" type="checkbox"/>	<input type="checkbox"/>
			OF	1

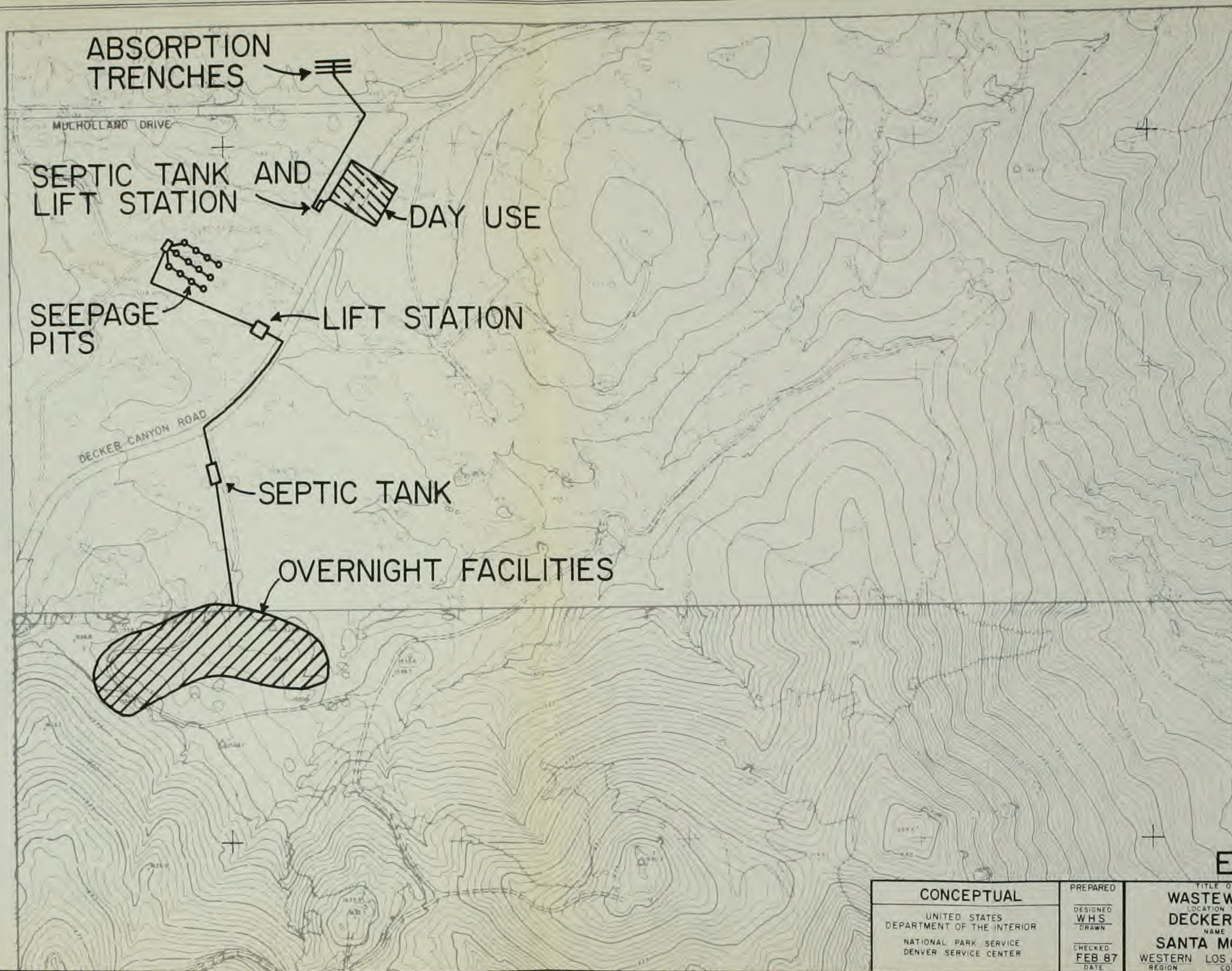


EXHIBIT V

<p>CONCEPTUAL</p> <p>UNITED STATES DEPARTMENT OF THE INTERIOR</p> <p>NATIONAL PARK SERVICE DENVER SERVICE CENTER</p>	<p>PREPARED</p> <p>DESIGNED WHS DRAWN</p> <p>CHECKED FEB 87 DATE</p>	<p>TITLE OF DRAWING WASTEWATER STUDY</p> <p>LOCATION WITHIN PARK DECKER CANYON</p> <p>NAME OF PARK SANTA MONICA NRA</p> <p>REGION WESTERN</p> <p>COUNTY LOS ANGELES</p> <p>STATE CALIFORNIA</p>	<p>DRAWING NO.</p> <p>PKG NO.</p> <p>SHEET 1 OF 1</p>
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McClelland engineers, Inc. / geotechnical consultants

2140 Eastman Avenue, Ventura, California 93003, Tel. (805) 644-5535, Telex 659-241, Telecopier (805) 642-4791

October 8, 1985
Report No. 0585-1320

Pedersen, Beckhart, Wesley,
and Stice Architects
930 Colorado Boulevard
Los Angeles, California 90041

Attention: Mr. John S. Miller

Geotechnical Study
Flora Hill Total Access Camping
Los Angeles County, California

Introduction

This report presents the results of our geotechnical study at your Flora Hill Total Access Camping site. The site is located near the corner of Mulholland Road and Decker Road in the Santa Monica Mountains of Los Angeles County as shown on Plate 1. This study was performed in accordance with our proposal dated September 16, 1985. The study was authorized by your letter dated September 23, 1985. An additional Seepage Pit Percolation Test was verbally authorized on September 26, 1985.

Purpose and Scope

The purposes of this study were to explore subsurface conditions at two selected locations to 20 ft depth and to determine percolation rate for a seepage test pit. Engineering analysis of the results for design and construction considerations for structures were not performed. These purposes and scope were accomplished by:

- (1) Drilling and sampling two borings to explore subsurface soil and rock conditions.
- (2) Performing laboratory soil tests to evaluate pertinent physical properties of the subsurface materials.
- (3) Performing a field seepage pit percolation test to determine the percolation rate.

Field Investigation

Drilling and Sampling. Subsurface soil conditions were explored by drilling and sampling in two borings at the locations shown on Plate 2. This Plate is based on a map provided to us by Mr. John Miller of Pedersen,

Beckhart, Wesley, and Stice Architects. The borings were drilled to a depth of 20.0 ft. A detailed description of the soils encountered is presented on the boring logs on Plates 3 and 4.

The borings were drilled on September 20, 1985, with a bucket-auger drill rig and crew subcontracted from Roy Brothers Drilling Company. The borings were performed at locations determined by Mr. Miller under the technical direction of our geotechnical engineer. The borings were advanced using a 2-ft diameter bucket-auger and samples were obtained with a 2800-lb, 12-in.-stroke hammer.

Samples were obtained at approximately 5 ft intervals to 10 ft depth. Samples were then obtained below 10 ft at selected locations at intervals ranging from 1 to 6 ft. A 2-3/8-in. I.D., 3-in. O.D. liner sampler was used to obtain samples in materials where an undisturbed sample could be retrieved. Additional disturbed samples were collected from the boring cuttings in gravelly materials or in rock. Each undisturbed sample was removed from the sampler in the field and then examined and visually classified by our engineer. Representative portions of the samples were sealed and packaged for transportation to our laboratory for testing. Groundwater was not encountered during our field investigation. Soil Boring B2 was covered with plywood after drilling and sampling were completed.

Seepage Pit Percolation Test. A seepage pit percolation test was performed in Soil Boring B2 in accordance with the requirements of the County of Los Angeles, Department of Health Services. The required procedure included a 24 hour presoak period and a percolation period to determine the percolation rate over a 24 hour period. The presoak was performed on September 30, 1985, under the direction of our geotechnical engineer. Soil Boring B2 was filled to within six (6) inches of the ground surface. All presoak water seeped through the subsurface materials within 24 hours. The test pit was then filled to within 24 inches of the ground surface on October 1, 1985. Due to the rapid drawdown of the seepage pit water level, percolation rates were monitored continuously for four (4) hours by our geotechnical engineer to accurately determine the percolation rate. Our analysis of the field data indicates that Boring B2 seeped at a percolation rate of 3.75 gal/sq ft/day. Our results are based on a 2-ft diameter hole extending to a depth of 20 ft.

Laboratory Investigation

A laboratory testing program was conducted to evaluate the classification, grain size, and density, characteristics of the underlying soils. Liquid and plastic limit tests were performed on selected cohesive samples to aid in soil classification. Classification of selected samples was aided by determining the percent material passing the No. 200 sieve and No. 4 sieve.

Natural moisture content was determined on representative samples. Unit dry weight was determined on samples obtained by the liner sampler. Undrained shear strengths of undisturbed cohesive samples were estimated with

a calibrated Torvane. However, all tested samples exceeded an undrained shear strength of 2.5 kips per square foot.

Results of most of these soil tests are plotted or tabulated on the individual boring logs presented on Plates 3 and 4. The following tabulation presents the types and numbers of tests performed, and the means used in presenting the test results.

<u>Type of Test</u>	<u>Number of Tests</u>	<u>Identifying Symbol</u>
Liquid and Plastic Limits	2	+ --- + on boring log
Percent Passing the No. 200 Sieve	4	Tabulated under "% Passing No. 200 Sieve"
Water Content	5	on boring log
Total Unit Weights	5	on boring log
Dry Unit Weights	5	on boring log
Torvane	5	on boring log

Soil and Rock Stratigraphy

Boring B1. The subsurface conditions at Boring B1 generally consist of a 1.5 ft thick stratum of slightly plastic sandy clay overlying a 1.5 ft thick stratum of sandy silt. These soils overlie sands and gravels to 13 ft depth. Weathered volcanic bedrock was encountered below the sands and gravels to the maximum depth explored at 20 ft. A descriptive summary of the major soil strata encountered, based on the boring log presented on Plate 3, is tabulated below:

<u>Stratum</u>	<u>Description</u>	<u>Penetration, ft</u>	
		<u>From</u>	<u>To</u>
I	Firm to stiff sandy clay with scattered coarse sand-sized rock fragments, dry	0	1.5
II	Medium dense, fine sandy silt with scattered coarse sand-sized rock fragments, slightly damp	1.5	3.0
III	Medium dense to dense gravelly sand to sandy gravel, slightly silty to silty, damp	3.0	13.0
IV	Weathered volcanic bedrock, damp	13.0	20.0+

Boring B2. The subsurface conditions at Boring B2 consist of a 5-ft thick stratum of slightly plastic sandy clay overlying clayey gravel that was

encountered to 10 ft. Weathered volcanic bedrock was encountered below 10 ft to the maximum explored depth at 20 ft. A descriptive summary of the major soil strata encountered, based on the boring log presented on Plate 4, is tabulated below:

<u>Stratum</u>	<u>Description</u>	<u>Penetration, ft</u>	
		<u>From</u>	<u>To</u>
I	Stiff sandy clay, moist	0	5.0
II	Medium dense clayey fine to coarse gravel, slightly sandy, moist	5.0	10.0
III	Weathered volcanic bedrock, damp	10.0	20.0+

The soil stratigraphy described above is based on our drilling observations and the results of laboratory testing. Soil conditions have been observed and interpreted at the boring locations only. Different conditions may become evident during construction.

This report has been prepared for Pedersen, Beckhart, Wesley and Stice Architects to be used solely for their Flora Hill Total Access Camping project. In performing our professional services we have used that degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical engineers practicing in this or similar localities. No other warranty, express or implied, is made as to the professional advice included in this report.

The data submitted in this report are based on soil conditions disclosed by the borings. Variations in soil conditions may become evident during construction.

* * * * *

We appreciate the opportunity to be of service to you in performing this study. Please contact us if you have any questions or require any additional information.

The following illustrations are attached and complete this report.

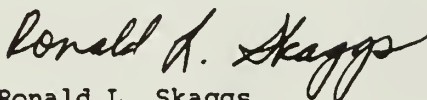
I L L U S T R A T I O N S

Plate

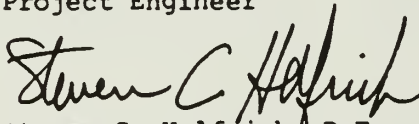
Vicinity Map	1
Plan of Borings	2
Log of Boring No. 1	3
Log of Boring No. 2	4
Grain Size Curves	5

Sincerely,

McCLELLAND ENGINEERS, INC.



Ronald L. Skaggs
Project Engineer



Steven C. Helfrich P.E.
Senior Geotechnical Engineer

RLS/SCH:ssb
Copies Submitted: (5)
Attachments

Exhibit VII: Construction Cost Estimate for Modified Alternative IV
Decker Canyon

Item	Total Access Camp	Quantity	Estimated Unit	Price	Unit Cost
1.	6" dia. cleanouts	6	ea	\$300	\$ 1,800
2.	500 gal grease trap	1		LS*	1,200
3.	4' dia. manholes (5'-6' deep)	4	ea	\$1,800	5,400
4.	6" dia. gravity sewerline	1,150	lin ft	\$30	34,500
5.	9,000 gal septic tank	1	ea		22,000
6.	4" dia. gravity sewerline	530	lin ft	\$24	12,720
7.	2 1/2" dia. PVC force main	430	lin ft	\$18	7,740
8.	Lift station and pumps	1		LS	30,500
9.	Electrical for lift station	1		LS	4,700
10.	Distribution box	1		LS	1,500
11.	6' dia. x 12' deep seepage pits	12	ea	\$3,500	42,000
12.	4" dia. connecting piping	530	lin ft	\$20	10,600
13.	4" dia. plug valves	3	ea	\$250	750
14.	Imported backfill	150	cu yd	\$8	1,200
15.	Site planting and seeding	1		LS	3,000
16.	Emergency seepage pit for lift station	1		LS	7,100
	25% contingency				<u>46,700</u>
	Subtotal				\$233,410
<u>Activity Center</u>					
17.	6" dia. gravity sewerline	40	lin ft	\$30	\$ 1,200
18.	4" dia. gravity sewerline	40	lin ft	\$24	960
19.	1,500 gal septic tank	1	ea		2,500
20.	Lift station and pumps	1		LS	16,500
21.	Electrical for lift station	1		LS	3,200
22.	2" dia. PVC force main	380	lin ft	\$16	6,080
23.	Absorption trench	280	lin ft	\$22	6,160
	20% contingency				<u>7,300</u>
	Subtotal				\$ 43,900
	Total				\$277,310

*Lump sum

SELECTED BIBLIOGRAPHY

BARBOUR, J. AND J. MAJOR

- 1979 Terrestrial Vegetation of California. New York: Wiley-Interscience.

BOOKER, R. W. AND ASSOCIATES

- 1969 Group Camp for the Handicapped, vols. 1 and 2. Saint Louis, Missouri: Dr. Edmund A. Babler Memorial State Park.

BOOTH, ERNEST SHELDON

- 1968 Mammals of Southern California. Berkeley: University of California Press.

CALIFORNIA COASTAL COMMISSION

- 1975 "Suggested Modifications to the Resubmitted Malibu Land Use Plan." County of Los Angeles Local Coastal Plan California Coastal Plan.
1985 Sacramento.

CALIFORNIA NATIVE PLANT SOCIETY

- 1980 Inventory of Rare and Endangered Vascular Plants of California. Berkeley: Special Publication no. 1, 2nd ed.

DIXON, JAMES R.

- 1967 Amphibians and Reptiles of Los Angeles County. Los Angeles County Museum: Science Series 23, Zoology no. 10.

FISH AND WILDLIFE SERVICE, U.S. DEPARTMENT OF THE INTERIOR

- 1984 Endangered and Threatened Wildlife and Plants, 50 CFR 17.11 and 17.12.

GARRETT, et al.

- 1981 Birds of Southern California, Status and Distribution. Los Angeles Audubon Society.

INDIANA UNIVERSITY

- undated Bradford Woods--Outdoor Education, Recreation, and Camping Center. Bloomington, Indiana: Department of Recreation and Park Administration, School of Health, Physical Education, and Recreation, Indiana University.

KING, CHESTER

- 1985 "Evaluation of the Archaeological Site Located South of the Intersection of Mulholland Highway and Decker Road." (Available at Santa Monica Mountains National Recreation Area to qualified archeologists.)

MUNZ, PHILIP A.

- 1974 A Flora of Southern California. Berkeley: University of California Press.

NATELSON, JAY W., et al.

- 1985 "Feasibility Analysis for Total Access Camping, Proposed Speciality Residential Camp." Los Angeles, California: Real Estate, Economic, and Financial Consultants.

RAAB, L. MARK

- 1986 Preliminary Field Report -- Decker Canyon (Available at Santa Monica Mountains NRA to qualified archeologists.)

RAVEN, P. H. AND H. J. THOMPSON

- 1966 Flora of the Santa Monica Mountains, California. Los Angeles: University of California.

SHAW, C. E. AND S. CAMPBELL

- 1974 Snakes of the American West. New York: Alfred A. Knopf.

STATE OF CALIFORNIA

- 1980 Endangered, Rare, and Threatened Animals of California. Sacramento: California Department of Fish and Game.

NATIONAL PARK SERVICE, U.S. DEPARTMENT OF THE INTERIOR

- 1980a Existing Recreation Use Within the Santa Monica Mountains National Recreation Area, by Robert G. Lee.
- 1980b "Potential Visitor Use Within the Santa Monica Mountains National Recreation Area."
- 1980c Land Acquisition Plan, Santa Monica Mountains National Recreation Area.
- 1980d Cultural Resources Preliminary Information Base, Santa Monica Mountains National Recreation Area, including "Ethnological and Archeological Summaries for the Santa Monica NRA General Management Plan" by Diane Gelburd and "Historical Overview of Santa Monica Mountains National Recreation Area" by Linda Green.
- 1980e "Accessible Trails, A Case Study at Malibu Creek State Park, Santa Monica Mountains National Recreation Area," by Lisa J. Bilhorn, Gail Comras, and Pat Miller. MS thesis, Department of Landscape Architecture, California State Polytechnic University, Pomona, California.
- 1981 Potential Visitor Use of Urban Minority and Handicapped Populations in the Santa Monica Mountains National Recreation Area, by Cindy Mark and Phil Holmes.
- 1982a Final General Management Plan, Santa Monica Mountains National Recreation Area.
- 1982b Final Environmental Impact Statement for the General Management Plan, Santa Monica Mountains Recreation Area (FEIS 82-13).

- 1982c Environmental Assessment/Development Concept Plan, Paramount Ranch, Santa Monica Mountains National Recreation Area.
- 1982d Proposed Public Use Plan, Cross Mountain Park, Santa Monica Mountains National Recreation Area.
- 1982e Draft Development Concept Plan/Environmental Assessment, Franklin Canyon Ranch, Santa Monica Mountains National Recreation Area.
- 1982f Natural Resource Management Plan/Environmental Assessment, Santa Monica Mountains National Recreation Area.
- 1983 National Park Service Policies on Accessibility for Disabled Persons, Special Directive 83-3.
- 1984a Land Protection Plan, Santa Monica Mountains National Recreation Area.
- 1984b Interpretation for Disabled Visitors in the National Park System, by David C. Park, Wendy M. Ross, and W. Kay Ellis.
- 1984c Development Concept Plan, Rancho Sierra Vista/Satwiwa, Santa Monica Mountains National Recreation Area.
- 1984d Mullholland Scenic Parkway Corridor, A Scenic Assessment, Santa Monica Mountains National Recreation Area.
- 1985 "Some Important Items To Consider When Providing Handicap Accessible Facilities," by Steve Stone.
- 1986a Fire Management Plan, An Amendment to the Natural Resources Management Plan (1982), Santa Monica Mountains National Recreation Area.
- 1986b Natural Resources Management Program, An Addendum to the Natural Resources Management Plan, Santa Monica Mountains National Recreation Area.
- 1986c "Site Analysis, Barrier Free Environmental Study Camp, Santa Monica Mountains National Recreation Area, California" by DSC and Santa Monica Mountains National Recreation Area staff.

